United States Department of Agriculture
Forest Service

Greater Sage-grouse Bi-state Distinct Population Segment Forest Plan Amendment

Draft Environmental Impact Statement

Humboldt-Toiyabe National Forest, Alpine and Mono Counties, California; and Douglas, Esmeralda, Lyon, and Mineral Counties, Nevada

August 2013

Greater Sage-grouse Bi-state Distinct Population Segment
Forest Plan Amendment Draft Environmental Impact Statement

Alpine and Mono Counties, California
Douglas, Esmeralda, Lyon, and Mineral Counties, Nevada

Lead Agency:	**USDA Forest Service**
Cooperating Agencies:	**Bureau of Land Management, and** **Mono County, California**
Responsible Official:	**William A. Dunkelberger, Forest Supervisor** **Humboldt-Toiyabe National Forest** **1200 Franklin Way** **Sparks, NV 89431** **Bernadette Lovato, District Manager** **BLM Carson City District** **5665 Morgan Mill Road** **Carson City, NV 89701**
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Abstract: The Humboldt-Toiyabe National Forest (the Forest) proposes to amend the Toiyabe National Forest Land and Resource Management Plan and the Bureau of Land Management proposes to amend the Carson City and Battle Mountain District's Resource Management Plans to conserve, enhance, and/or restore habitats to provide for the long-term viability of the Greater Sage-grouse Bi-state Distinct Population Segment. This action is needed to address the recent "warranted, but precluded" Endangered Species Act (ESA) finding from the U.S. Fish and Wildlife Service (USFWS) by addressing needed changes in the management and conservation of the Bi-state Distinct Population Segment habitats within the project area to support greater sage-grouse population management objectives within the states of Nevada and California. In preparation of the draft environmental impact statement (EIS) two alternatives were considered in detail and five were considered and eliminated from detailed consideration. The two alternatives considered in detail are the (1) no-action alternative that would not amend the land use plans with additional regulatory mechanisms. and (2) the proposed action which would amend the plans to include goals and objectives, and standards and guidelines to direct the management of activities proposed in grouse habitat. At this point in the analysis process the proposed action is the preferred alternative.

This proposed amendment is subject to the objection procedures of 36 CFR 219 Subpart B (see 219.52(a)). It is important that reviewers provide their comments so that they are useful to the Agency's preparation of the EIS. Therefore, comments should be provided prior to the close of the comment period and should clearly articulate the reviewer's concerns and contentions. The comment period for this draft EIS extends 90 days following publication of the notice of availability in the *Federal Register*. The submission of timely and specific comments can affect a reviewer's ability to participate in subsequent administrative review or judicial review. Comments received in response to this solicitation, including names and addresses of those who comment, will be part of the public record for this proposed action. Comments submitted anonymously will be accepted and

considered; however, anonymous comments will not provide the respondent with standing to participate in subsequent administrative or judicial reviews.

Send Comments to:	**Jim Winfrey** **Humboldt-Toiyabe National Forest** **1200 Franklin Way** **Sparks, NV 89431**
Date Comments Must Be Received:	**90 days after the publication of the notice of availability in the *Federal Register*, expected August 23**

Summary

The Humboldt-Toiyabe National Forest (the Forest) proposes to amend the Toiyabe National Forest Land and Resource Management Plan (LRMP) and the Carson City and Battle Mountain District's/Tonopah Field Office Resource Management Plans (RMPs) of the BLM to conserve, enhance, and/or restore habitats to provide for the long-term viability of the Greater Sage-grouse Bi-state Distinct Population Segment (referred to in this document as *Bi-state sage grouse* or *greater sage-grouse*).The area affected by the proposed amendment includes approximately 648,800 acres of mapped habitat on Forest Service and Bureau of Land Management (BLM) administrated lands in both Nevada and California. This action is needed to address the recent "warranted, but precluded" Endangered Species Act (ESA) decision from the U.S. Fish and Wildlife Service (USFWS) by addressing needed changes in the management and conservation of the Bi-state Distinct Population Segment habitats within the project area to support sage grouse population management objectives within the states of Nevada and California.

This project was introduced to the public via a notice of intent to prepare an EIS published in the *Federal Register* on November 30, 2012. The publication of the notice of intent started the scoping period and comments were requested to be received by January 30, 2013. The Forest sent out news releases about the project starting December 6, 2012, conducted public meetings on January 9 and 10, 2013, and sent out a scoping letter on November 30, 2012, to about 200 interested parties. After the scoping period, issues were identified and edits were made to the proposed regulatory mechanisms to address comments. These issues are addressed in this draft EIS, and while other alternatives to the proposed action were considered, only the no action and the proposed action alternatives were analyzed in detail (for more information see Chapter 2).

Major conclusions include:

- The proposed action would provide the regulatory mechanisms needed to respond to the USFWS's publishing of a "warranted, but precluded" Endangered Species Act listing petition 12-month finding for the Bi-state sage grouse and improve the ability of the Forest Service and BLM to conserve, enhance, and/or restore sagebrush and associated habitats to provide for the long-term viability of the Bi-state sage grouse.

- Impacts of this proposed amendment on various resources is expected to be minor, with specific project design features being addressed at the site-specific NEPA level. However, both the Forest Service and BLM have already been incorporating conservation measures to project the Bi-state sage-grouse for several years, so any change in site-specific activities is expected to be minimal.

Based upon the effects of the alternatives, the responsible official will decide to amend the Forest Plan as described in the proposed action, to amend the Forest Plan with a modification of the proposed action, or not to amend the Forest Plan.

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Chapter 1. Purpose of and Need for Action

Introduction

The Forest Service has prepared this environmental impact statement (EIS) in compliance with the National Environmental Policy Act (NEPA) and other relevant Federal and State laws and regulations. This EIS discloses the direct, indirect, and cumulative environmental impacts that could result from the proposed action and alternatives.

The Humboldt-Toiyabe National Forest (Forest), is issuing this draft EIS to disclose the expected effects of a proposed amendment to the Toiyabe Land and Resource Management Plan (1986, Forest Plan) to incorporate management direction to conserve, enhance, and restore habitat for the Bi-state Distinct Population Segment of the Greater Sage-grouse (Bi-state sage-grouse). The area to which the proposed amendment would apply would be on the Bridgeport and Carson Ranger Districts of the Forest.

While the Forest Service is the lead agency for preparing the EIS, the Bureau of Land Management (BLM), as a cooperating agency, is proposing to amend the Battle Mountain/Tonopah Field Office Resource Management Plan (RMP) and Carson City Field Office Consolidated RMP based on analysis in this EIS.

The combined Forest Service and BLM area to which the amendments would apply (amendment area) contains portions of Lyon, Mineral, Esmeralda, and Douglas counties in Nevada, and in portions of Alpine, Inyo, and Mono counties in California. The total amendment area boundary is the land encompassing lands administered by the Forest Service (National Forest System [NFS] land), and by the BLM (public land) that also include other agency lands and private lands (see figure 1). This total amendment area boundary encompasses approximately 5,040,400 acres. The amendment area where this proposed action will apply encompasses only the Forest Service and the BLM administered lands. These lands total approximately 4,277,200 acres (about 3,044,800 acres of BLM, and about 1,232,400 acres of Forest Service).

About 781,700 acres of Bi-state sage-grouse habitat falls within the total amendment area boundary. The total habitat within the Forest Service and BLM administered lands within the amendment area is approximately 648,800 acres (about 223,900 acres of BLM, and about 424,900 acres of Forest Service).

Additional documentation, including more detailed analyses of affected resources, may be found in the planning record located at the Humboldt-Toiyabe National Forest Supervisors office at 1200 Franklin Way, Sparks, Nevada 89431.

Background

In March of 2010 the USFWS published a “warranted, but precluded” Endangered Species Act listing petition 12-month finding for the Greater Sage-grouse Bi-state Distinct Population Segment (Bi-state sage grouse). The USFWS concluded that existing regulatory mechanisms to protect sage grouse and their habitats in the Bi-state area “…afford sufficient discretion to the decision makers as to render them inadequate to ameliorate the threats to the Bi-state Distinct Population Segment”. The major threats identified by the USFWS in regards to actions authorized on NFS lands and BLM public lands is habitat modification, including modification

from infrastructure (fences, powerlines, and roads), recreation, mining, energy development, grazing, fire, invasive species, noxious weeds, pinyon-juniper encroachment, and climate change.

Current Forest Service and BLM Conservation Effort. In the effort to be proactive, the Bridgeport and Carson ranger districts have been reducing impacts to the Bi-state sage-grouse and habitat by designing and incorporating protective measures (i.e., management direction) into all of their projects for the past several years. These protective measures are supported by but not specified in the current land management plans. These efforts were documented in the March 15, 2012, publication from the Bi-state Executive Oversight Committee for the Conservation of Greater Sage-grouse entitled, "Bi-state Action Plan: Past, Present and Future Actions for the Conservation of the Great Sage-grouse Bi-state Distinct Population Segment". That document not only highlighted the current conservation activities, but also identified the primary threats to the Bi-state sage grouse.[1]

On December 3, 2012, the BLM Nevada State Office released Instruction Memorandum (IM) No. NV-2013-009, which provides interim conservation policies and procedures to the BLM field officials to be applied to ongoing and proposed authorizations and activities that affect the Bi-state sage grouse and its habitat. The IM direction ensures that interim conservation policies and procedures are implemented when the Carson District or Battle Mountain/Tonopah Field Office authorizes or carries out activities on public land during the current revision of their RMPs so as to not foreclose any future options before the planning process can be completed. The IM direction supplements the direction for Bi-state sage-grouse contained in the BLM Washington Office (WO) IM 2010-071 (Gunnison and Greater Sage-grouse Management Considerations for Energy Development) and is consistent with WO-IM-2011-138 (Sage-grouse Conservation Related to Wildland Fire and Fuels Management).

Other Related Efforts. Various agencies have been working for several years to study and improve the habitat conditions for the greater sage-grouse and the Bi-state sage-grouse. These agencies include the BLM, Forest Service, USFWS, United States Geological Service (USGS), National Resource Conservation Service (NRCS), Nevada Department of Wildlife, California Department of Fish and Game, and the Bi-state Sage-grouse local area working group.

Some of these agencies have produced documents including the Bi-state Sage-grouse Action Plan of 2012 and the Technical Report on National Greater Sage-grouse Conservation Measures and Planning Strategy in 2011. The BLM and Forest Service are working on five sub-regional EISs covering 10 western states to amend up to 20 land and resource management plans for the greater sage-grouse; however, those EISs do not address the Bi-state sage-grouse but do contain information that is applicable to this distinct population segment. For more information on this region-wide effort see "Nevada and Northeastern California Great Sage Grouse Land Use Plan Amendment/Environmental Impact Statement" (2013).

[1] Threats include, but are not limited to, urbanization, roads and fences, livestock and wild horse grazing, pinyon and juniper encroachment, wildfire, and isolation of small populations. In addition, permitted activities such as recreation events; mineral exploration, development, and production; and vegetation treatments can be threats.

Figure 1. Vicinity map of the amendment area boundary

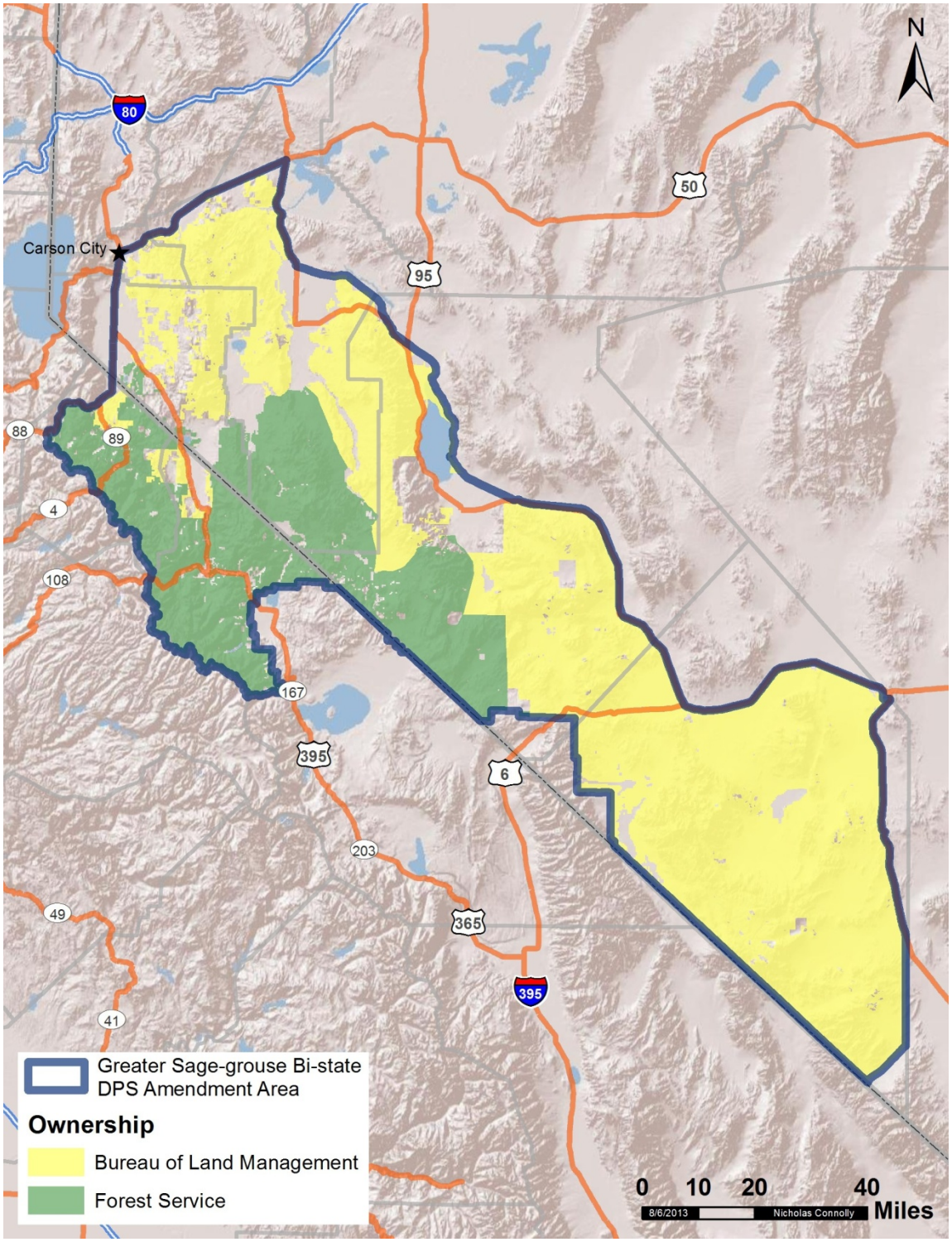

Figure 2. Forest Service and BLM administered lands within the amendment area

Purpose and Need for Action

To address the USFWS finding, the Forest and the BLM Carson City and Battle Mountain districts and the Tonopah Field Office are proposing to amend their respective Forest Plan and RMPs, collectively referred to as "land use plans", to include goals, objectives, standards, and guidelines as part of a regionwide effort (USDI BLM and USDA Forest Service, draft, May 2013) to conserve the Bi-state sage-grouse and its habitat.

The purpose of the proposed amendment is to conserve, enhance, and/or restore sagebrush and associated habitats to provide for the long-term viability of the Bi-state sage grouse. This action is needed to address the recent "warranted, but precluded" Endangered Species Act listing, and to support Bi-state sage grouse population management objectives within the states of Nevada and California. Under the National Forest Management Act of 1976 (NFMA) and the Federal Land Policy and Management Act of 1976 (FLPMA), the Forest Plan and RMPs direct and guide management of the NFS and BLM lands and resources administered under them. All projects and activities must be consistent with the applicable Forest Plan or RMP.

Proposed Action

The Forest Service is proposing to amend the Toiyabe National Forest Land and Resource Management Plan (Forest Plan) and the BLM is proposing to amend the Battle Mountain/Tonopah Resource Management Plan (RMP) and the Carson City Field Office Consolidated RMP by adding to or changing some of the regulatory mechanisms to reduce, eliminate, or minimize threats to the Bi-state sage grouse habitat on Federal lands administered under those plans.

The specific regulatory mechanisms in the proposed plan amendment are identified in Chapter 2 under the proposed action alternative.

Decision Framework

The Forest Plan amendments would be limited to direction specific to the conservation of the habitats of the Bi-state sage-grouse (see figure 1 in chapter 2). Based on this EIS the responsible official will make the following decisions:

1) To amend the Forest Plan as described in the proposed action;

2) To amend the Forest Plan with a modification of the proposed action; or

3) Not to amend the Forest Plan.

Because the BLM may use this EIS as the basis for amending their RMPs, the EIS includes effects to BLM programs and resources; however, the decision to be made by the Forest Service responsible official is for only the Forest Plan.

Public Involvement

The notice of intent was published in the *Federal Register* on November 30, 2012 (*Federal Register* Volume 77, Number 231). The notice asked for public comment on the proposal to be received by January 30, 2013.

In addition, a scoping letter was sent out to the public on November 30, 2012, describing the proposed action and asking for comments. This letter was sent out to approximately 200 organizations and individuals.

The Agency also published a news release in the *Reno Gazette* and *Reno Journal* on December 6, 2012 (with a stop date of January 30, 2013). The release described the project and invited public comment. The agencies also hosted two public meetings. One was held on January 9, 2013, in Minden, Nevada, and the other on January 10, 2013, in Smith Valley, Nevada, where about 15 people attended the meetings.

Public notification of this proposed action was posted on line from November 29, 2012, to January 30, 2013, at http://www.fs.fed.us/nepa/nepa_project_exp.php?project=40683. This proposed amendment is subject to the objection procedures of 36 CFR 219 Subpart B (see 219.52(a)).

Issues

Using the comments from the public and other agencies, the interdisciplinary team developed a list of issues to address.

Issues are defined as a point of disagreement, debate, or dispute about the proposed action based upon the effects of that action. These issues are separated into two groups, "key issues" and "non-key issues." Key issues were defined as those directly or indirectly caused by implementing the proposed action and are used to formulate alternatives or prescribe mitigation measures or monitoring requirements. Non-key issues were identified as those: (1) outside the scope of the proposed action; (2) already decided by law, regulation, Forest Plan, or other higher level decision; (3) irrelevant to the decision to be made; (4) conjectural and not supported by scientific or factual evidence.

We addressed key and non-key issues in three ways: (1) developing an alternative to alter resource tradeoffs, (2) requiring mitigation to reduce impacts to a resource, and (3) disclosing and comparing the relative difference in resource effects between alternatives. One or more of these methods may be used to address an issue.

The following two key issues were identified during scoping for this project and are addressed in chapter 3:

1. **Access Issue:** The proposed action could result in a reduced level of access across the planning area, reducing opportunities for recreation on trails, routes, cross-country travel limitations, and limited permits for discretionary actions on NFS and BLM administered lands.

    a. ***Issue measure:*** Miles of travel routes that would potentially be open to use before and after the proposed amendment is implemented.

    b. ***Issue measure:*** Miles of travel routes that would potentially have seasonal restrictions after the proposed amendment is implemented.

    c. ***Issue measure:*** Acres of land available for cross-country travel or would potentially have seasonal restrictions after the proposed amendment is implemented.

   d. ***Issue measure:*** Potential change in anticipated number of permits to be issued or renewed for access purposes after the proposed amendment is implemented.

2. **Economics Issue:** The proposed action could adversely affect the economy of the region by limiting the utilization of rangelands, mineral sites, geothermal activities, and tourism due to buffer zones and timing limitations to protect the sage grouse.

   a. ***Issue measure:*** Potential effects to the economic well-being of the study area are assessed in a qualitative discussion comparing current operating costs and predicted operating costs associated with the proposed amendment.

The following non-key issues were identified during scoping and brought forward to disclose the analysis to the public.

1. Effects to wildlife
2. Effects to range improvements and domestic livestock grazing
3. Effects to weeds
4. Effects to wild horses and burros
5. Effects to minerals
6. Effects to fire and fuels management

Applicable Laws, Regulations, Policies and Executive Orders

Disclosures and findings required by these laws and orders are contained in this EIS where appropriate:

- American Indian Religious Freedom Act of 1978
- Archeological Resource Protection Act of 1979
- Clean Air Act of 1979 (as amended)
- Clean Water Act of 1977 (as amended)
- Endangered Species Act of 1973 (as amended)
- Executive Order 11593 (cultural)
- Executive Order 11988 (floodplains)
- Executive Order 11990 (wetlands)
- Executive Order 12898 (environmental justice)
- Executive Order 13007 (American Indian sacred sites)
- Executive Order 13175 (consultation and coordination with Indian Tribal Governments)
- Executive Order 13186 (Migratory Bird Treaty)
- Forest and Rangeland Renewable Resources Planning Act of 1874 (as amended)
- Magnuson-Stevens Fishery Conservation and Management Act of 1996

- National Environmental Policy Act (NEPA) of 1969 (as amended)
- National Forest Management Act (NFMA) of 1976
- National Historic Preservation Act (NHPA) of 1966 (as amended)
- Native American Graves Protection and Repatriation Act of 1990
- Rescissions Act of 1995 (as amended)
- Wilderness Act of 1964
- General Mining Law of 1872 (as amended)
- Mineral Leasing Acts of 1920 (as amended)
- Mineral Material Acts of 1947 (as amended)
- Surface Resources Act of 1955
- Mining and Minerals Policy Act of 1970
- Energy Policy Act of 2005
- Geothermal Steam Act of 1970 (30 USC 1004)

Chapter 2. Alternatives, Including the Proposed Action

Introduction

This chapter describes and compares the alternatives considered for this EIS, and includes a description of both alternatives considered. This section also presents the alternatives in comparative form, sharply defining the differences between the alternatives and providing a clear basis for choice among options by the decision maker and the public. Some of the information used to compare the alternatives is based upon the design of the alternative and some of the information is based upon the potential environmental, social, and economic effects of implementing each alternative.

Alternatives Considered in Detail

The Forest Service developed two alternatives in response to issues raised by the public—the no action and proposed action alternatives.

Alternative 1 – No Action

Under the no-action alternative, current land use plans would continue to guide management of the amendment area which includes sensitive species direction (USDA Forest Service 1986 [as amended] and BLM RMP 2007]). No Forest Plan or RMP amendment would be approved for the purpose of conserving, enhancing, and/or restoring sagebrush and associated habitats to provide for the long-term viability of the Bi-state sage-grouse. While the management plans would not be amended, the agencies would continue to manage for the sage grouse. The BMPs used by the Forest to protect habitat would still be implemented on a project-to-project basis (for details see appendix 1). The Interim Management Direction signed in December 2012, for the Nevada BLM (see appendix 1) would also dictate how projects conducted in sage grouse habitat are analyzed and implemented. The Bi-state sage-grouse is a Forest Service Region 4 sensitive species, included as "sage grouse" in the Forest Plan. Current management direction most pertinent to the conservation of Bi-state sage-grouse includes Wildlife and Fish, goal 1:

> …sensitive species will be recognized and protected through habitat management and coordination with state wildlife agencies. Habitat will be in good-to-excellent condition…

Current management also includes standards for sage grouse habitat management (Wildlife and Fish, standard 3), as well as resource- or activity-specific management direction addressing wildlife, sensitive species, and sagebrush would continue to apply to Bi-state sage-grouse.

The no-action alternative would not meet the purpose and need for this project. The catalyst for this project is the underlying need for the institution of regulatory mechanisms to conserve, enhance, and/or restore sagebrush and associated habitats to provide for the long-term viability of the Bi-state sage grouse. While project-level decisions are being made that can move habitat toward this goal in the no-action alternative, no regulatory mechanisms (i.e., management direction) would be added to the plans. Since the lack of regulatory mechanisms was identified as one of the threats to the species, the no action alternative (current plans and direction) would not meet the need.

The no-action alternative represents the baseline for analysis. The current plans and direction are the baseline, the direction we follow for every project proposed in the amendment area. The no-action alternative allows us to address both of the key issues. It represents the current level of access and the current state of the economy. Any changes from those current states can then be used to measure the amount of departure that would result from the proposed amendment.

Alternative 2 – The Proposed Action

The Forest Service is proposing to amend the Toiyabe National Forest Land and Resource Management Plan (Forest Plan) and the BLM is proposing to amend the Battle Mountain/Tonopah Resource Management Plan (RMP) and the Carson City Field Office Consolidated RMP by adding to or changing some of the regulatory mechanisms to reduce, eliminate, or minimize threats to the Bi-state sage-grouse habitat on Federal lands administered under those plans.

The Toiyabe National Forest LRMP and BLM RMP amendments will recognize valid existing rights. Lands addressed in the LRMP and RMP amendments will be NFS lands and public lands (including surface-estate split estate lands) managed by the Forest Service and BLM, respectively, in habitats of the Bi-state sage grouse. The LRMP and RMP amendments would apply only to Federal lands administered by either the Forest Service or the BLM respectively.

Table 1 lists the desired future conditions, expressed as desired habitat conditions, goals, objectives, standards and guidelines, proposed to amend the Toiyabe National Forest LRMP and the BLM RMP.

Bi-state Sage grouse Priority Habitat

For this amendment, Bi-state sage grouse preliminary priority habitat (priority habitat) refers to the "Bi-state Greater Sage-grouse Preliminary Priority Habitat Map" (priority habitat map) of all seasonal and year-round Bi-state DPS habitat plus all land within 5 kilometers (about 3.1 miles) of active leks. The priority habitat map was created with modeling and aerial imagery, and is therefore subject to field-verification and updates as new information becomes available.

While greater sage grouse leks and core breeding habitat are fairly stable over time, they are not fixed geographic points and are subject to change. For example, leks may become inactive or active and habitat areas may change over time (such as after wildland fire modifies habitat). Appropriate conservation measures will be considered and applied on a case-by-case basis through NEPA for proposed projects based on ground surveys within proposed disturbance areas.

For the priority habitat map in this amendment proposal, the Forest Service proposes to use the habitat map created and approved by the Bi-state Sage Grouse Technical Advisory Committee, consisting of representatives from California and Nevada BLM, U.S. Geological Survey, Forest Service, USFWS, and the California and Nevada state wildlife agencies. The May 12, 2012, version is available on the Humboldt-Toiyabe National Forest and BLM websites. Updates may become available on an annual basis as monitoring and mapping continues.

The proposed amendment would allow small changes, less than 100 acres per section, to be made as an adjustment to the map without requiring a subsequent Forest plan amendment. Larger changes, greater than 100 acres per section, would require the Forest to be consistent with the appropriate NEPA and forest planning requirements.

Table 1. Bi-state sage grouse desired habitat conditions

Category	Desired Condition
General	▪ Bi-state sage grouse habitat is expanded beyond the current 1,133,000 acres present on national forest system lands and BLM public lands, as of 2014.
	▪ Sagebrush communities are large and intact.
	▪ Riparian areas are managed for proper functioning condition, have diverse species richness, including perennial forbs; a perimeter:area ratio of 1 to 6.667 (0.15); and hiding cover around the edge.
	▪ Soils are stable and hydrological function is intact.
	▪ The native plant community is resilient, with the appropriate shrubs, grasses, and forbs, as identified in the ecological site description.
	▪ The extent and dominance of invasive species, including cheatgrass, is limited.
	▪ There is no conifer encroachment within line-of-site of leks or nesting areas; there are less than 3 to 5 trees per acre in other areas (Connelly et al. 2000).
Leks	▪ There is adjacent sagebrush cover (Connelly et al. 2000; Blomberg et al. 2012).
	▪ No trees or other structures taller than the surrounding vegetation community are within line-of-sight of the lek or within 3 kilometers (about 1.9 miles)(Connelly et al. 2000; Doherty et al. 2008).
Nesting	▪ Sagebrush canopy cover is greater than or equal to 20 percent; species composition includes *Artemisia tridentata*.
	▪ Total shrub canopy cover is greater than or equal to 40 percent.
	▪ Annual grass canopy cover is less than 5 percent of the total vegetative cover.
	▪ If shrub cover is less than 25 percent, perennial grasses cover is greater than or equal to 10 percent.
Brood-Rearing/ Summer	▪ Sagebrush canopy cover is greater than or equal to 10 percent (Connelly et al. 2000).
	▪ Arid perennial forb canopy cover is greater than or equal to 5 percent; mesic perennial forb canopy cover is 15 percent (Casazza et al. 2011; Lockyer et al. [in review]).
	▪ Perennial forb diversity is greater than or equal to five species.
Brood-Rearing/ Winter	▪ Sagebrush canopy cover is greater than or equal to 10 percent; height is greater than or equal to 25 centimeters (about 9.8 inches); extent is greater than 85 percent of area; species composition is *A. tridentata* greater than 50 percent, *A. arbuscula* equals 25 percent, and *A. vaseyana* equals 25 percent (Connelly et al. 2000; Coates et al. (a) [in preparation], (b) [in preparation]; Doherty et al. 2008).

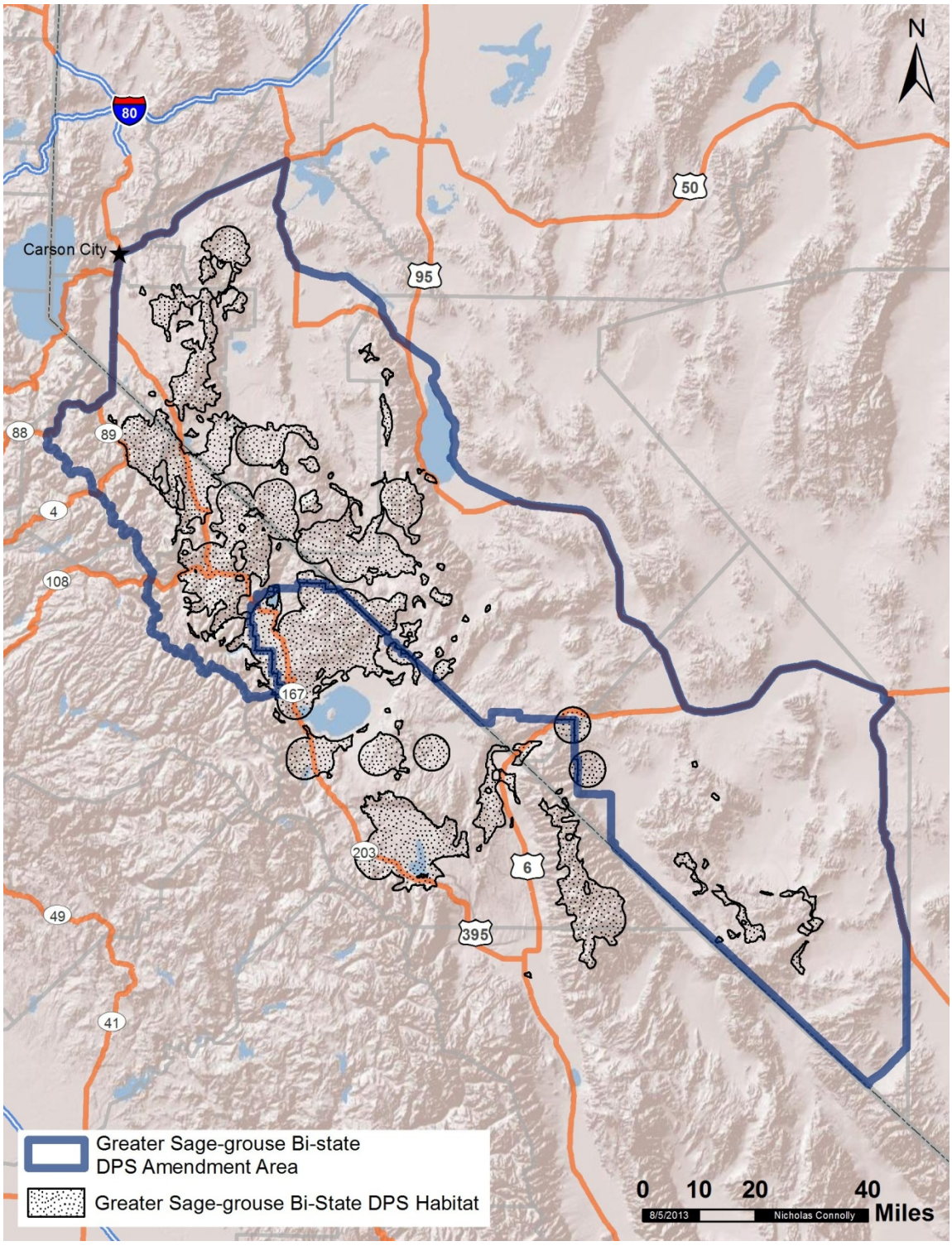

Figure 3. Priority Bi-state sage grouse habitat

Seasonal Dates for the Bi-state Sage grouse

These dates listed in table 2 are to be used to evaluate impacts unless site-specific information is available.

Table 2. Dates used to evaluate impacts unless site-specific information is available

Date	Impacts
March 1–May 15	Breeding (critical disturbance period; dates may shift 2 weeks back or forward in atypically dry or wet years based on observations of lek activity).
April 1–June 30	Nesting and early brood-rearing (critical disturbance period; dates may shift 2 weeks back or forward in atypically dry or wet years based on observations of lek activity).
July 1–September 15	Late brood-rearing
August 15–October 31	Fall
November 1–March 1	Winter

Proposed Action Goals, Objectives, Standards and Guidelines

Table 3 outlines goals, objectives, and standards and guidelines for the proposed action. Table 4 lists monitoring indicators by management question.

Table 3. Goals, objectives, and standards and guidelines for the proposed action

Goal 1: Bi-state sage grouse priority habitat and movement corridors are managed to bring vegetation communities to their ecological site potential and to maintain or increase the species.
Objective 1a: By 2024, 200,000 acres of degraded priority habitat has been improved through changes in management or restoration to meet habitat objectives.
Objective 1b: By 2024, Bi-state sage grouse populations will be at or above current levels.
Standard 1a: Habitat restoration projects shall be designed to meet one or more of the following habitat needs: ▪ Promote the maintenance of large, intact sagebrush communities; ▪ Limit the expansion or dominance of invasive species, including cheatgrass; ▪ Maintain or improve soil site stability, hydrologic function, and biological integrity; and ▪ Enhance the native plant community.
Standard1b: When seeding, genetically and climatically appropriate and certified weed-free plant and seed material shall be used.
Standard 1c: After soil disturbances or seeding, the land shall not be returned to soil-disturbing authorized uses for a minimum of two annual cycles or until desired habitat conditions have been met, whichever is longer.
Standard 1d: Any vegetation treatment within Bi-state sage grouse habitat shall maintain, improve, or restore Bi-state sage grouse habitat.
Guideline 1a: Time implementation of habitat restoration projects so they cause the least disturbance to Bi-state sage grouse individuals, and populations as possible.
Goal 2: Bi-state sage grouse and their priority habitats will benefit from standards and guidelines adopted to eliminate or reduce negative impacts and increase positive impacts from discretionary and non-discretionary actions.
Objective 2a: By 2020, Bi-state sage grouse productivity, survival, or use of seasonal habitats will be at least at the same level as they are in 2014.
Objective 2b: By 2019, water developments (tanks/troughs) on NFS lands and BLM public lands will be designed or retrofitted to decrease risks of drowning or disease or as breeding sites for vectors such as

mosquitos.
Standard 2a: Long-term negative impacts in habitat from discretionary or non-discretionary activities shall be mitigated to the extent practicable.
Standard 2b: Buffers, timing limitations, or offsite habitat restoration shall be applied to all new or renewed discretionary actions in Bi-state-sage grouse habitat to mitigate potential long-term negative impacts.
Standard 2c: When long-term negative impacts from non-discretionary actions are unavoidable, mitigations shall be assigned to result in no net loss of habitat.
Standard 2d: No structures or powerlines taller than the surrounding vegetation that could serve as predator perches shall be installed within 3 kilometers (about 1.9 miles) of a lek.
Standard 2e: No structures greater than 8-feet tall that could serve as predator perches shall be installed within Bi-state sage grouse habitat unless they are equipped with anti-perching devices.
Standard 2f: Water developments (tanks/troughs) shall be drained when not in use so they do not create a breeding ground for mosquitos that carry West Nile Virus.
Standard 2g: Wildlife escape ramps shall be installed and maintained in water troughs or open water facilities with vertical embankments that pose a drowning risk to birds.
Standard 2h: Livestock watering and handling facilities (corrals, chutes, dipping vats, etc.) salting or supplemental feeding stations or sheep bedding grounds shall not be located within 1 kilometer of a lek or riparian areas.
Standard 2i: Grazing permits, AOIs (annual operating instructions), or other appropriate mechanism for livestock management shall include terms, conditions, and direction to move toward or maintain Bi-state sage grouse habitat desired conditions.
Standard 2j: Visible markers shall be installed on fences and other barriers, especially if the fence or other barrier is on flat topography, has spans exceeding 12 feet between T-posts, has no wooden or equally visible posts or supports, or where fence or barrier densities exceed 1.6 miles of fence per 80 by 80 acre section (640 acres).
Standard 2k: Only use pesticides outside of the critical disturbance periods and only after other integrated pest management approaches have been considered. Only use chemicals with the lowest toxicity to birds that still provide control in coordination with USDA or APHIS, depending of the targeted pest.
Standard 2l: Federal lands in Bi-state sage grouse habitat shall be retained unless a public interest determination identifies a net benefit to Bi-state sage grouse habitat.
Standard 2m: The Forest Land Acquisition Plan shall include all private parcels that include Bi-state sage grouse habitat within the NFS boundaries.
Standard 2n: When informed that a right-of-way is no longer in use, relinquish the right-of-way and reclaim the site by removing powerlines, reclaiming roads, and removing other infrastructure.
Guideline 2a: To the extent possible, do not install fences in Bi-state sage grouse habitat unless to protect habitat or for human health and safety. If fences must be installed, they shall be at least 3 kilometers (about 1.9 miles) from active leks, and if possible, let-down when not needed for the purpose of their installation.
Guideline 2b: Use existing roads and co-locate powerlines whenever possible to reduce disturbance footprints and habitat fragmentation.
Guideline 2c: Where feasible, bury powerlines to reduce overhead perches.
Goal 3: In priority habitat, fuels treatments are used as a management tool when the benefits to Bi-state sage grouse clearly outweigh the risks; otherwise fire is suppressed in priority habitat after life and property.
Objective 3a: By 2024, proactive fire prevention treatments will have been implemented in or adjacent to 30 percent of the identified priority habitat.
Objective 3b: By 2019, risk of unwanted fire in priority habitats shall be 20 percent lower compared to

conditions in 2014.
Standard 3a: Agency personnel, contractors, and permit holders working in areas with known weed infestations shall clean vehicles of dirt, mud, and visible plant debris before entering a different area to reduce the spread of noxious weeds.
Guideline 3a: Where possible do not use fire, including brush control, as a management tool in areas where there is threat of cheatgrass invasion, sagebrush areas with less than 12 inches of annual precipitation or 12 inches of soil, or areas where the sagebrush cover would be reduced to less than 15 percent.
Guideline 3b: Do not use fire as a management tool in areas where the risk of escaped fire could cause negative long-term impacts.
Guideline 3c: When wildfires occur, resource advisors shall immediately identify areas important to Bi-state sage grouse (such as leks) to fire personnel.
Guideline 3d: Priority for suppression of non-management wildfire in priority habitat should be immediately after life and property.

Table 4. Monitoring indicators by management question

Management question 1: Are the Humboldt-Toiyabe National Forest and BLM progressing toward the habitat goals for the Bi-state sage grouse?
Monitoring indicators: Miles, acres, and number of structures removed, installed, relocated, decommissioned, modified, or mitigated to benefit sage grouse habitat. Number of discretionary use authorizations issued that included beneficial protective measures to sage grouse and sage grouse habitat. ▪ Acres of sage grouse habitat altered by fire. ▪ Acres of burned habitat reseeded or replanted. ▪ Acres of vegetation treated to benefit sage grouse. ▪ Acres of treated vegetation that meet habitat objectives.
Management question 2: Are the Humboldt-Toiyabe National Forest and BLM management progressing toward habitat goals maintaining or increasing the species?
Monitoring indicator: Number of Bi-state sage grouse leks.

Implementation of the amendment would include development of a monitoring technical guide. The monitoring technical guide would include details about methods or protocols to monitor the monitoring indicator. Changes to the guide would be made as necessary to maintain effectiveness and efficiency of the monitoring for the monitoring questions and indicators. The monitoring technical guide would not be part of the land use plans, and therefore could be changed without a plan amendment or administrative change.

Alternatives Considered but Eliminated from Detailed Study

Federal agencies are required by NEPA to rigorously explore and objectively evaluate all reasonable alternatives and to briefly discuss the reasons for eliminating any alternatives that were not developed in detail (40 CFR 1502.14). Public comments received in response to the proposed action provided suggestions for alternative methods for achieving the purpose and need. Some of these alternatives may have been outside the scope to conserve, enhance, and/or restore habitat for the Bi-state sage grouse, duplicative of the alternatives considered in detail, or determined to be components that would cause unnecessary environmental harm. Therefore, a number of alternatives were considered, but dismissed from detailed consideration for reasons summarized below.

There were five alternatives considered but eliminated from detailed study.

1) An alternative was considered that would change all standards in the proposed amendment into guidelines. This alternative was not considered because of how the definitions and applications of standards and guidelines differ. A standard is defined as a course of action that must be followed, or a level of attainment that must be reached to achieve Forest goals. Adherence to standards is mandatory. In general, they limit project-related activities, not compel, or require them. *A project or activity that deviates from a standard may be approved only if a Forest Plan amendment to change the standard is approved that would result in the project or activity being consistent with the Forest Plan.* Standards are developed when: applicable laws or policies do not exist, or clarification of existing laws or policies is needed, they are critical to achievement of objectives, or unacceptable impacts may occur if a standard is not in place.

In comparison, a guideline is also a course of action that must be followed. However, guidelines are applied to activities where site-specific factors may require some flexibility. *A project or activity that deviates from a guideline may be approved only if it is as effective in achieving the purpose for the guideline and documented in the appropriate approval document for the project or activity.*

Projects that are consistent with standards or guidelines would result in meeting the intent of the standard or guideline for conserving, enhancing, or restoring sagebrush and associated habitats to provide for the long-term viability of the Bi-state sage grouse. However, the deciding officer would have flexibility in how the project is designed under a guideline as long as its purpose can be achieved, but there is no flexibility under a standard. As discussed in the "Background" section, for the proposed amendment, in the 12-month finding, the FWS expressed concern about the level of discretion that deciding officers have under the current land use plans in making decisions at the project level. Even while acknowledging regulatory mechanisms may exist, the USFWS viewed the level of discretion as allowing application of the mechanisms to vary, reducing their adequacy. A plan amendment that includes only guidelines and no standards would not address this USFWS concern about the level of discretion and consistency of application, and therefore not meet the purpose and need for the proposed amendment. Because of this, an amendment with only guidelines and no standards was not considered further.

2 & 3) Two alternatives were discussed involving the use of buffers. One would extend buffers put in place for various conservation actions, and the other would limit/remove these buffers altogether. The original proposed amendment presented at the beginning of scoping had language about specific buffers for various potential actions. The standards and guidelines have since been rewritten to buffer habitat components instead of projects. By buffering habitat components the effects analysis becomes consistent across alternatives and is less speculative. Buffering projects would require a great deal of speculation in the analysis concerning the number, extent, and duration of different types of projects.

4) In the public comments several groups and individuals suggested that the agencies no longer allow certain types of activities to occur within the amendment area. Based on these public scoping comments the interdisciplinary team considered an alternative that would eliminate all discretionary actions within the amendment area. Discretionary actions are actions that the Forest Service is not required by law to consider. These include almost everything the agencies do, from the authorization of special use permits to cross NFS lands, to planning and implementing projects to restore sagebrush habitat for the benefit of the Bi-state sage grouse.

This alternative was discussed as a way to illustrate the trade-offs of not allowing any discretionary actions to occur within the amendment area. The current land use plans allow for various types of resource management and recreation. Forest Service and BLM are multiple-use agencies by definition. An alternative that would practically eliminate all of those activities, regardless of relationship to the conservation of the Bi-state sage grouse, would be outside the scope and intent of the proposed amendment and would not meet the overall management goals and objectives for the amendment area and would not be consistent with multiple use.

5) The last alternative considered was the "habitat exclusion" alternative. A geographically based alternative was discussed that would redraw the habitat map to exclude areas that have a high degree of ongoing activity. Areas that would have been excluded from habitat include developed mine sites, areas with intense mineral exploration activity, areas with high recreation use, and areas with potential for geothermal lease and development. This alterative would have removed those habitat areas from the protections this proposed action offers. This alternative was eliminated from detailed consideration because it would have resulted in fragmentation to the habitat and does not meet the purpose and need of this proposal to conserve, enhance, and/or restore sagebrush and associated habitats of the Bi-state sage grouse, regardless of the habitat's relative location to various human activities.

Comparison of Alternatives

This section provides a summary of the effects of implementing each alternative. Information in Table 5 focuses on activities and effects where different levels of effects or outputs can be distinguished quantitatively or qualitatively among alternatives.

Table 5. Key and non-key issues comparison by alternative

Issue	Alternative 1–No Action	Alternative 2–Proposed Action
Key Issues		
Access (Recreation and Special Uses)	*Recreation*: No change from current condition *Special Uses*: No change from current condition	*Recreation*: No change from current condition due to the proposed action; site-specific NEPA will determine any change in use. *Special Uses*: Minor; process could be streamlined over existing situation—site-specific NEPA could determine some seasonal or timing restrictions on special uses.
Economics	No change from current condition	No change from current condition for direct impacts. Minor potential for indirect and cumulative impacts dependent on site-specific NEPA project designs.
Non-Key Issues		
Wildlife	Lack of regulatory mechanisms allow for various potential threats to habitat loss to continue	Proposed amendment improves protections for the Bi-state sage grouse and supports a "may affect individuals, but is not likely to result in a trend toward Federal listing or loss of viability" for the Bi-state sage grouse and other sage-habitat-dependent species determination.
Range Improvements and Domestic Livestock Grazing	No change from current condition	Depending on site-specific analysis, the proposed action could result in changes to the permitted seasons of livestock use, grazing, and location of watering and handling facilities.
Weeds	No change from current condition	Mostly beneficial effect on invasive weeds by limiting disturbance.
Wild Horses and Burros	No change from current condition	Depending on site-specific analysis, the proposed action could impact six herd management areas/wild horse and burro territories by adding the need for timing limitations and the minimization of disturbance of habitat.
Minerals	No change from current condition	Depending on the site-specific analysis, the proposed action could impact the extraction of various mineral resources due to timing limitations and the minimization of disturbance of habitat.
Fire and Fuels Management	No change from current condition	The proposed action is expected to have similar effects as current interim management, depending on site-specific analysis.

Chapter 3. Affected Environment and Environmental Consequences

Introduction

This chapter summarizes the physical, biological, and economic environments that are affected by the alternatives and the effects on that environment that would result from implementation of any of the alternatives. This chapter also presents the scientific and analytical basis for comparison of the alternatives presented in chapter 2.

Analysis Process

Most of the data used in the following analysis are from the Humboldt-Toiyabe National Forest corporate GIS layers and those of the Nevada State BLM. There is a certain amount of error in the location and size of features included in this GIS data. For example, the fence and powerline corridor layers may be incomplete. There may also be errors resulting from the different sources from which the different layers were obtained. Some perennial streams may show up on the map as being intermittent, which could create some inaccuracies as to the exact location and extent of riparian zones. The Forest is constantly working to improve map accuracies and the corporate GIS layers.

For the purposes of this analysis, the best data available was used. The data in the tables below and in the project record depict with a reasonable amount of accuracy what would be occurring on the ground for each alternative, within the limitations described above. The changes between alternatives remain relative to each other.

Cumulative Effects

According to the Council on Environmental Quality (CEQ) National Environmental Protection Act (NEPA) regulations, "cumulative impact" is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such actions (40 CFR 1508.7).

The cumulative effects analysis area is described under each resource, but in most cases includes the entire extent of the units involved. In the economics analysis, the cumulative effects analysis area includes private and other public lands that lie within the boundaries of the six potential affected counties. Past activities are considered part of the existing condition and are discussed in the "Affected Environment" (existing condition) and "Environmental Consequences" sections under each resource.

The CEQ issued an interpretive memorandum on June 24, 2005, regarding analysis of past actions, which states, "agencies can conduct an adequate cumulative effects analysis by focusing on the current aggregate effects of past actions without delving into the historical details of individual past actions." In order to understand the contribution of past actions to the cumulative effects of the proposed action and alternatives, this analysis relies on current environmental conditions as a proxy for the impacts of past actions. This is because existing conditions reflect the aggregate impact of all prior human actions and natural events that have affected the environment and might contribute to cumulative effects.

Overall Approach to Effects Analysis

We have established the following analysis framework for this project:

- This is a programmatic analysis; the resulting decision will provide guidance for Forest Service and BLM land managers as they develop, review, and implement site-specific projects on NFS lands and public lands managed by the BLM in the amendment area.
- This analysis will not compare the action alternatives to a pristine, untouched environment; but rather to the no-action alternative, which includes an array of management activates not covered in the current management plans.
- Property owners and managers other than the Forest Service and BLM within the amendment area are not restricted by or subject to the proposed management direction unless activities occur on NFS lands or public lands managed by the BLM.
- There are no areas of critical environmental concern within this amendment area.

Because none of the alternatives makes a project or activity specific decision, for the purposes of this programmatic analysis, the interdisciplinary team made assumptions about implementation of the Forest Plan under the alternatives. The following section describes the assumptions during their analysis of the alternatives on various resources. Disclosure of the direct, indirect, and cumulative impacts that each alternative could potentially have is further described in this chapter and is contained in specialist reports in the planning record.

Analysis Assumptions

General (All alternatives)

- Appropriate NEPA analysis would be required for project- or activity-specific decisions.
- The decision not to amend or to amend the land use plans does not ensure USFWS action not to add (or to add) the Bi-state sage-grouse to the ESA list of threatened and endangered species.

Access (Proposed Action)

- Future site-specific NEPA analysis would be required to address timing and types of recreational use that are determined to potentially cause discrete or long-term disturbances. Most current use is expected to be diffuse and have neutral or short-term impacts.
- Travel routes that pass through active leks may be seasonally closed during the period when birds are on the leks. This would require a site-specific NEPA decision or Forest closure order.
- During nesting/broad rearing, designated roads and trails would be open to individual casual users unless discrete and long-term impacts are identified from this use.
- Seasonal travel route closures to protect the species would require site-specific NEPA analysis.
- Road maintenance on Forest Service roads and private of county rights-of-way upon renewal may have timing limitations and other mitigations attached.

Livestock (All alternatives)

- Livestock grazing is a diffuse impact that has a potential for a neutral or short-term impact.
- During sage grouse leking livestock grazing is a neutral or short-term impact.
- Livestock concentration can represent a discrete impact, but the impact may be long term or short term depending on timing and location.
- Standards and guidelines identified in the amendment are there to reduce impacts where livestock may concentrate (such as near water sources, gathering facilities, supplement sources, etc.).

Special Uses (Proposed Action)

- Mitigation measures would be used to limit diffuse and discrete disturbances to Bi-state sage grouse during all seasons, in particular for those existing and proposed activities that are ground-disturbing.
- Instead of creating new disturbance, consolidation of developments, location near or along existing permitted corridors, and similar stipulations are expected to be included in future projects.
- Nothing in the proposed amendment would preclude authorization of a special use permit.
- Group events and some outfitter-guide permits would be subject to timing limitations.
- The time period for approval of permits could be extended due to the need for site-specific NEPA analysis and the inclusion of additional design features.

Non-discretionary Locatable Minerals (Such as Gold, Copper and Silver) (Proposed Action)

- Timing limitations for such activities as construction, surface disturbance, drilling, occupancy, and others may be assigned.
- Each component of the project will be evaluated and mitigated to reduce or eliminate long-term negative impacts to Bi-state sage grouse to the extent practicable.
- Off-site mitigation may be recommended for unavoidable long-term impacts to Bi-state sage grouse.
- Nothing in the proposed amendment would preclude authorization of a plan of operations.

Discretionary Saleable Minerals (Such as Sand and Gravel) Discretionary) (Proposed Action)

- Exploration and development permits and new mine sites will be discouraged/carefully considered in Bi-state sage grouse habitat, especially if the purpose and need for the action can be met outside the habitat.

- Expansion of existing pits inside habitat may have timing limitations and hours of use modified. Measures to control noise, dust, visual, and other impacts may be added, along with other mitigations to reduce negative long-term impacts.
- The level of analysis may be increased due to the complexity and potential for impacts to Bi-state sage grouse.
- Alternative may be developed for analysis of proposed surface disturbance outside of Bi-state sage grouse habitat if practicable.
- Nothing in the proposed amendment would preclude authorization of a saleable permit.

Discretionary Leasable Minerals (Such as Geothermal, Oil and Gas, Solid Leasable) (Proposed Action)

- Exploration and development may be discouraged/carefully considered or minimized in Bi-state sage grouse habitat, especially if the purpose and need for the action can be met outside the habitat.
- New development components would be placed to have the least impact on Bi-state sage grouse and may be placed outside habitat where possible.
- Stipulations for leasing and new leasing analysis would incorporate the applicable standards, objectives, and guidelines from this amendment.
- Timing limitations and other mitigations would be applied to activities inside Bi-state sage grouse habitat if they cause long-term negative impacts.
- Nothing in the proposed amendment would preclude authorization of a leasable permit.

Vegetation Habitat Improvement Projects (Proposed Action)

- Long-term discrete disturbance is expected for vegetative improvement. During implementation, the sage grouse would not be using area because of disturbance. While sage grouse are expected to move back into the area after implementation, their return is not certain and would occur after the vegetation is restored to meet their habitat needs.
- Implementation in large restoration areas may take 10 years to complete.
- Vegetation habitat improvement would emphasize mechanical treatment.

Bi-state Sage-grouse (Proposed Action)

- Protecting habitat, improving habitat, and reducing disturbance will help maintain or increase the population and distribution of the species.
- Although the alternatives apply only to lands administered by the Forest Service or BLM, none of the alternatives prohibits mitigation activities that may be required for Forest Service or BLM authorization or to meet the purpose of the proposed action from occurring on lands administered by other government, private, or Tribal entities under appropriate authorizations.

Resource Analysis

Each resource specialist assessed the potential effects of the proposed action on the ability to manage the resource program and associated land users.

The resource sections in this chapter provide a summary of the project-specific reports, assessments, and other documents prepared by resource specialists on the interdisciplinary team. These reports are part of the project record on file at the Humboldt-Toiyabe National Forest Supervisor's Office in Sparks, Nevada, and are available on request. The following reports, assessments, and other documents are incorporated by reference:

- **Recreation and Lands Special Uses**: Recreation and Lands Special Uses specialist reports
- **Wildlife**: Wildlife Specialist Report and the Biological Assessment/Biological Evaluation (BA/BE)
- **Minerals:** Minerals Specialist Report
- **Economics:** Economics Specialist Report
- **Rangeland Improvement and Domestic Livestock Grazing:** Rangeland, Weeds, and Wild Horses and Burros specialist reports
- **Fire and Fuels Management:** Fire and Fuels Specialist Report

Information on Other Resource Issues

The proposed amendment does not affect the following resource issues, or localized effects are disclosed under other resource sections. A brief summary on why they are not discussed further in chapter 3 is provided based upon input received during scoping.

Climate Change. The proposed amendment identifies regulatory mechanisms to conserve, enhance, and/or restore sagebrush habitats. These regulatory mechanisms will not have either a positive or negative impact on climate change. Neither will climate change have an effect on how the regulatory mechanisms in the proposed amendment are eventually implemented.

Research Natural Areas. Research natural areas that fall within the amendment area have their own set of management directions which, in general, prohibit management activities. Nothing in this proposed amendment would alter or change the specific management direction defined in the Forest plans for research natural areas.

Wilderness and Wilderness Study Areas. The proposed amendment does not affect wilderness areas. Site-specific activities designed to improve sagebrush habitats that include portions of a wilderness or wilderness study area would have to meet both the management direction for the Bi-State sage grouse and directions specific to the Wilderness Act.

Environmental Justice (Executive Order 12898): The proposed action will not result in any identifiable effects or issues specific to any minority or low-income population or community. The Agency considered all public input from persons or groups regardless of age, race, income status, or other social/economic characteristics. Examination of community composition, as required under this Executive order, found no minority or low-income communities to be disproportionately affected under any of the alternatives. This was not raised as an issue during scoping.

Civil Rights. The USDA civil rights policy requires each agency to analyze the civil rights impact(s) of policies, actions, or decisions that will affect federally conducted and federally assisted programs and activities. A civil rights impact analysis facilitates the identification of the effects of eligibility criteria, methods of administration, or other agency-imposed requirements that may adversely and disproportionately impact employees or program beneficiaries based on their membership in a protected group. Protected groups include multiples of similarly situated persons who may be distinguished by their common race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetics, political beliefs, or receipt of income from any public assistance program. The proposed amendment would result in no identifiable effects or issues specific to any minority or low-income population or community. The Agency considered all public input from persons or groups regardless of age, race, income status, or other social/economic characteristics. Examination of community composition, as required under this Executive order, found no minority or low-income communities to be disproportionately affected under the proposed amendment.

Analysis of Effects

Access Issue

Recreation Resources

Summary

Neither alternative would close, restrict or otherwise change recreation opportunities in the amendment area. However, under the proposed action, if proposed or ongoing activities were found to have a discrete and long-term impact on sage grouse, they would be evaluated in subsequent environmental analysis, and timing, location, nor seasonal restrictions could occur. Most activities in the amendment area are expected to be only a minor disturbance with a neutral impact on Bi-state sage grouse.

Affected Environment

Recreation activities occurring in the amendment area are mostly dispersed and do not rely on developed facilities. Use is year-round and consists of varied activities including hiking, mountain biking, OHV riding, camping, hunting, and scenic touring. Day use is high, and there are very few developed facilities. Areas of concentrated use occur at popular destinations. Heavy public OHV use occurs in the north part of the Pine Grove Hills. There are many motorized special events, mostly in June. The Walker ATV Jamboree is particularly popular, with participation doubling from year to year. BLM permitted events include competitive motorcycle races, OHV and other vehicle races, competitive horse endurance rides, organized camping events, and competitive mountain bike races. These are described in further detail below:

- Annual 2-day organized group camping and motorcycle riding at Wilson Canyon; motorcycle riders will use area around Wilson Canyon for localized riding whereas riders looking for extended trail riding opportunities will head north to Smith Valley/Singatse Range or south onto Forest Service administered land.

- OHV truck/buggy races (May/September) in the Singatse Range/Lincoln Flat/Churchill Canyon/Adrian Valley area.

- Annual 1-day mountain bike race held mid-May in the western Pine Nut Range near Ruhenstroth or just east of county landfill.
- Annual 1-day horse endurance ride held late May/early June staged out of Dayton rodeo grounds. Course located in north Pine Nut Range.
- Annual ATV tours conducted mid-June over 3-day period in Pine Nuts.
- Annual dual sport motorcycle ride held mid-June in Lyon/Mineral Counties, West Wassuks/Cambridge Hills area.
- Annual o1-day horse endurance ride held late June in southwestern part of Pine Nut Range.
- Annual Vegas to Reno OHV race (August) comes through northern part of Pine Nuts via Adrian Valley and Churchill Canyon.

Forest Service permitted events typically include the following:

- Sierra Trail Dogs motorcycle event lasting for 2 days in June (150 motorcycles).
- Modesto Ridge Runners event taking place in August (60 to 80 vehicles).
- Walker ATV Jamboree taking place in June (200 to 300 participants over 5 days).

Most organizers of these types of events prefer activities to take place in June to avoid later summer heat.[2]

Forest recreation staff has identified concerns with unauthorized OHV use, crowding, unpermitted outfitting and guiding, and impacts to cultural resources from visitor use. There is considerable use of area roads for military training, which occasionally conflicts with visitor activities.[3]

For more information on numbers and types of visitors and the activities they prefer, see the Recreation and Lands Special Uses Resource Report, pages 3–10.

There are about 11,605 miles of travel routes (designated roads and trails) in the amendment area.[4] Neither agency has designated open OHV "play areas" in the amendment area. On Forest Service lands, no off-road driving is allowed; the BLM does allow some cross-country travel. Existing travel routes on BLM have not been completely evaluated through a travel management planning process and have not been completely "designated". The current OHV designation for much of the BLM managed land in the amendment area is "open" to unrestricted cross-country travel. Approximately 45,000 acres along the Pine Nut Crest are currently designated as limited to designated routes; however, the travel management process has never been completed for this area. The Burbank Canyons Wilderness Study Area (13,395 acres), located at the southern end of the Pine Nut Mountain Range, was closed to motorized use in the 1980s through a *Federal Register* notice. A small portion (25,000 to 30,000 acres) of the Pine Nut Range includes lands that limit motorized use to existing routes through the 2009 Omnibus Act. The rest of the public lands in the Pine Nuts are designated open to OHV.

[2] Personal communication, Forest Service, 2013.
[3] Carson and Bridgeport Outfitter-Guide Needs Assessment, 2013; internal document.
[4] GIS data, Forest Service and Forest ServiceBLM, 2013.

Over the years there have been temporary restrictions on motorized use in the Pine Nuts related to recent fires. Recent fire perimeters or portions of burned areas have a "limited to existing routes" restriction on them. Typically they remain in effect for 2 years after posted in the *Federal Register*.

There are no public lands in Alpine County designated open to motorized use. The Alpine County Plan Amendment (2007) either limited motorized use to designated routes or closed it. A small area, between 250 to 300 acres near Harvey's Place reservoir has been closed to all public access (both motorized and nonmotorized uses). Travel management has not been completed for Alpine County.[5]

Of the designated travel routes (roads and trails) within the amendment area, 388 miles pass through active sage grouse leks and 58.4 through inactive leks.[6]

In 2011, 16 outfitter/guide permits were in effect on the Carson Ranger District and 15 on the Bridgeport Ranger District, although not all of these use the amendment area. In 2011, between the two districts, 39,006 service days were authorized to outfitter/guides, less than 1 percent of total visitor use according to National Visitor Use Monitoring results. Most of these were in areas other than the amendment area.

Specific to the amendment area, outfitters are currently permitted to take clients fishing, hunting, and snowmobiling. Actual client days used rarely meets the days allotted for these activities. With the exception of hunting, the majority of outfitted trips are day use. One seasonal fishing guide is permitted by the BLM in the amendment area. For more information on outfitting and guiding, see the Recreation and Lands Special Uses Resource Report, pages 5–6 and 9.

Determination and issuance of special use permits for both outfitters and for recreation events are governed by interim direction that seeks to minimize impacts to sage grouse habitat. The Forest Service follows the Interim Conservation Recommendations for Greater Sage-grouse and Greater Sage-grouse Habitat (2012) and the BLM the interim direction contained in BLM IM NV 2012-061. Both documents contain specific instructions on evaluating, permitting, and mitigations for recreation special uses activities. The documents also reference guidelines for evaluating travel management activities. The BLM interim direction also provides guidance for evaluating recreation sites for impacts to sage grouse habitat.

Environmental Effects

Recreation Management Indicators. Management indicators relate to level and type of access for recreational opportunities (table 6).

[5] Information on BLM designations this paragraph and previous two, personal communication with the BLM, August 2013.
[6] GIS data, Forest Service and BLM, 2013.

Table 6. Management indicators for assessing effects to recreation

Issue	Management Indicator	Justification
Access	Miles of travel routes open to use before and after the proposed action is implemented.	Loss of recreation opportunity, displacement of users, or a change in recreation experience due to restrictions, closures, or modifications of activities from the standards and guidelines in the proposed action. Specifically: *Standard 2a:* Long-term negative impacts in habitat from discretionary or non-discretionary activities shall be mitigated to the extent practicable. *Standard 2b:* Buffers, timing limitations, or offsite habitat restoration shall be applied to all new or renewed discretionary actions in Bi-state-sage grouse habitat to mitigate potential long-term negative impacts.
	Miles of travel routes having seasonal restrictions after the proposed action is implemented.	
	Acres of land available for cross country travel opportunities or having seasonal restrictions after the proposed action is implemented.	
	Anticipated change of permits to be issued or renewed for access purposes once the proposed action is implemented.	

Alternative 1 – No Action

Direct/Indirect Effects. There are no direct effects of the no-action alternative. People could continue to recreate on public lands as they have done in the past. Access would not be limited seasonally, permanently, or through modifications of permits except through normal permitting processes. To meet current plan direction, applications for recreation special use permits would continue to be analyzed using existing agency policy, determination of need, and site-specific environmental analysis. Existing permits would continue under their current stipulations and terms and conditions. The demand for new recreation facilities could be met if other conditions allowed for their construction.

In the long term, there would be little indirect effect to recreation, recreation special uses, or lands special uses from the no-action alternative. Those visitors who enjoy seeing sage grouse could lose that opportunity if the birds abandon leks and forage areas as a result of disturbance not currently restricted by the land use plans. Those visitors who appreciate and value an intact ecosystem would notice changes over time. As sage grouse habitat degrades from lack of action, some visitors may choose not to visit those areas for a variety of reasons, including increased development, the presence of nonnative plant or animal species, and lack of plant and animal diversity.

Table 7. Management indicators for assessing effects to recreation by alternative

Issue/ Management Indicator	Changes
Access	
Alternative 1 – No Action	
Miles of travel routes open to use before and after the proposed action is implemented.	No change
Miles of travel routes having seasonal restrictions after the proposed action is implemented.	No change
Acres of land available for cross country travel opportunities or having seasonal restrictions after the proposed action is implemented.	No change
Anticipated change of permits to be issued or renewed for access purposes once the proposed action is implemented.	No change
Alternative 2 – Proposed Action	
Miles of travel routes open to use before and after the proposed action is implemented.	None due to proposed action
Miles of travel routes having seasonal restrictions after the proposed action is implemented	None due to the proposed action; site-specific NEPA may include seasonal restrictions
Acres of land available for cross country travel opportunities or having seasonal restrictions after the proposed action is implemented	Change on Forest Service land (currently zero); site-specific NEPA may change acres available on BLM land
Anticipated change of permits to be issued or renewed for access purposes once the proposed action is implemented	None due to the proposed action; site-specific NEPA may modify or change permits

Alternative 2 – Proposed Action

Direct/Indirect Effects. Recreation could potentially be affected by implementation of proposed amendment. Changes in recreation settings and opportunities could result from implementation of the standards and guidelines in the proposed action. Timing limitations and limitations placed on construction could diminish certain types of recreation opportunities that depend on free, unmanaged access.

Recreational experiences are vulnerable to any management action that would alter the settings and opportunities in a particular area. Recreation settings are based on a variety of attributes, such as remoteness, the amount of human modification in the natural environment, evidence of other users, restrictions and controls, and the level of motorized vehicle use. Management actions that greatly alter such features within a particular portion of the decision amendment area could affect the capacity of that landscape to support diverse recreation opportunities.

It is expected that most individual recreation activities, such as casual driving and use of designated trails, would be considered a diffuse disturbance with no long-term effects. Most of the restrictive standards would not be expected to apply to most activities; but some may be restricted by seasonal road closures to reduce impact to the species while leking. Because impacts to recreation from the proposed action would be dependent on the level of restriction, mitigation, and stipulations determined by the future site-specific NEPA analysis conducted, impacts to access from individual recreation activities from the proposed action would be minor.

Because only 388 miles of travel routes pass through active leks and that leking occurs between March 1 and May 15, impacts resulting from reduced access are expected to be minor. Also, recreation opportunities during this time of year are fewer and there are many miles of other travel routes for recreationists.

While recreation special use permits would still be granted depending on need and other factors, mitigation or restrictive measures could be placed on types, locations, and timing of activities to ensure consistency with the proposed amendment. Group events could be subject to timing limitations, which could limit the ability of some participants to attend. For example, many recreation events for which permits are issued on public land take place in June[7]. In June the grouse are on nests and brood rearing. If the proposed activity poses a threat, the event may be moved or timing changed in order to the meet standard 2b to reduce impacts during this period. It is possible that organizers may decide not to hold their event if they cannot hold the event at a particular time. This would represent a reduction in opportunity for participants who would otherwise have been attending such events each year. However, there are many acres of BLM and Forest Service land outside of the amendment area that would be available for these types of events. Current events are evaluated and modified if necessary under the existing interim direction for both agencies, so it is expected that changes to existing events would be minor.

Cumulative Effects

Cumulative effects to recreation within the amendment area boundary would relate to other administrative or Forest and BLM management activities occurring within or immediately adjacent to the amendment area. The present and foreseeable actions relevant to the cumulative effects analysis for recreation resources and lands special uses are:

- Carson and Bridgeport Ranger Districts' Outfitter-Guide Program Analysis
- Revision of land management plans for both agencies and associated changes in policy and direction

The spatial boundaries for analyzing the cumulative effects to recreation are the amendment area and adjacent public lands, because typically visitors do not cease to recreate at specific land management boundaries. Often, restrictions and management actions on adjacent public lands can cause recreation patterns to change in response, including displacement to other areas where restrictions are fewer, and concentration of use in areas where access is easier.

In the revision process both agencies will adopt standards and guidelines designed to address the need to protect Bi-state sage grouse and habitat. These are likely to reflect the same standards and guidelines as those currently being implemented by the BLM Bishop Field Office. The standards and guidelines that could directly impact permitted recreation opportunities would apply across the unit boundaries of the two Federal agencies habitat wide.

Cumulatively this would represent a change in the timing and use of sage grouse habitat range wide. Outside the range there would be little change. The temporal boundaries are either short term and temporary, occurring during a single season (direct effects), or longer term (indirect effects).

Alternative 1 – No Action. There are no cumulative effects anticipated under this alternative.

[7] Personal communication, BLM and FS, 2013.

Alternative 2 – Proposed Action. Across the amendment area and cumulative effects analysis area many of the standards and guidelines being proposed are already being implemented either through formally recognized management guidance in an RMP (Bishop Field Office), informal application of best management practices (Humboldt-Toiyabe), or through interim management direction (Inyo National Forest and Nevada BLM). As a result, we expect little change resulting from this action, and cumulatively, all Forest Service and BLM units with Bi-state sage grouse habitat would be managed consistently. Cumulative effects to recreation would depend on any new direction proposed in upcoming land management plan revisions. Changes in how recreation is managed, along with any seasonal or timing restrictions determined in future NEPA analysis, could have a cumulative effect on recreation opportunities in the amendment area. Future outfitter-guide allocations determined in the ongoing needs assessment could further restrict new applicants. There may be a wholesale shift in the timing of recreation across the habitat because of the consistent management direction. However, these effects are expected to be minor because a majority of the public lands do not fall within the amendment area.

Lands Special Uses Resource

Summary

The proposed action itself would not prohibit new lands special uses in the amendment area. Existing and new structures permitted would be subject to height restrictions throughout the amendment area if they do not meet standards 2d and 2e. If current or future activities associated with these permits were found to have a discrete and long-term impact on sage grouse, they would be evaluated in subsequent environmental analysis and timing, location, or seasonal restrictions could be applied.

Affected Environment

Lands special use permits in effect in the amendment area include utility corridors, powerlines, and communication sites. On the BLM lands, portions of four BLM-designated utility corridors traverse the amendment area, totaling about 88 miles and covering a total area of approximately 133,500 acres, of which 112,850 acres (85 percent) are on BLM-administered land. All utility corridors are occupied by electrical transmission lines, which include 120-kilovolt (kV) Mount Rose to Brunswick, 120-kV Verdi to Bluestone, 120-kV Fort Churchill to Buckeye, and 60-kV Carson to Yerington. Also, a natural gas transmission line located generally within the Carson to Yerington and Mason Valley to Brunswick utility corridors. There are communications sites in the Como Pass and Rawe Peak areas. There are currently no lands special use authorizations on the Battle Mountain District portion of the amendment area, and no solar or wind developments on either agency's portion of the area.

Forest Service lands special use permits include 4 powerlines, 5 fiber-optic lines, 2 telephone lines, 11 communication sites, several water-related structures (dams, reservoirs, pipelines, ditches, storage tanks), 5 Department of Transportation road easements, and 11 concessionaire-operated campgrounds.[8]

Determination and issuance of permits are governed by interim direction that seeks to minimize impacts to sage grouse habitat. The Forest Service follows the Interim Conservation Recommendations for Greater Sage-grouse and Greater Sage-grouse Habitat (2012) and the BLM interim direction contained in BLM IM NV 2012-061. Both documents contain specific instructions on evaluating, permitting, and mitigations for lands special uses activities.

[8] Forest Service personal communication, 2013.

Recreation special uses are addressed in the "Recreation" section.

Environmental Effects

Management Indicators. Indicators relate to access and economic viability (table 8).

Table 8. Management indicators for assessing effects to lands special uses

Issue	Management Indicator	Justification
Access	Anticipated change of permits to be issued or renewed for access purposes once the proposed action is implemented.	The proposed action could result in a reduced level of access across the planning area, reducing opportunities for utility corridors, powerlines, and communication sites on NFS lands and BLM public lands.
Economics	Estimated change in opportunities for the development of alternative energy resources (i.e., geothermal, solar, wind, etc.).	The proposed action could adversely affect the economy of the region by limiting the utilization of rangelands, mineral sites, geothermal alternative energy activities, and tourism, due to buffer zones and timing limitations to protect sage grouse habitat.

Alternative 1 – No Action

Direct/Indirect Effects. There would be no direct or indirect effects on lands special uses under this alternative. The interim management direction would continue to guide issuance of permits. Applications for lands special use permits would continue to be analyzed and approved or denied using existing agency policy, determination of need, and site-specific environmental analysis. Existing permits would continue under their current stipulations and guidelines. Opportunities would be unchanged for development of alternative energy resources with subsequent economic benefit for the region.

Table 9. Management Indicators for assessing effects to lands special uses by alternative

Issue/ Management Indicator	Changes
Access	
Alternative 1 – No Action	
Anticipated change of permits to be issued or renewed for access purposes once the proposed action is implemented.	None
Alternative 2 – Proposed Action	
Anticipated change of permits to be issued or renewed for access purposes once the proposed action is implemented.	Minor; process could be streamlined over existing situation: site-specific NEPA could determine some seasonal or timing restrictions on access
Economics	
Alternative 1 – No Action	
Estimated change in opportunities for the development of alternative energy resources (i.e., geothermal, solar, wind, etc.).	None
Alternative 2 – Proposed Action	
Estimated change in opportunities for the development of alternative energy resources (i.e., geothermal, solar, wind, etc.).	Minor; some applicants could withdraw proposals due to modifications

Alternative 2 – Proposed Action

Direct/Indirect Effects. Standards and guidelines in the proposed action would include site-specific analysis of proposed and existing activities in the amendment area. Specific standards and guidelines with the potential to affect permitted activities that include lands special uses include the following:

Standard 2a: Long-term negative impacts in habitat from discretionary or non-discretionary activities shall be mitigated to the extent practicable.

Standard 2b: Buffers, timing limitations, or offsite habitat restoration shall be applied to all new or renewed discretionary actions in Bi-state-sage grouse habitat to mitigate potential long-term negative impacts.

Standard 2d: No structures or powerlines taller than the surrounding vegetation that could serve as predator perches shall be installed within 3 kilometers (about 1.9 miles) of a lek.

Standard 2e: No structures greater than 8-feet tall that could serve as predator perches shall be installed within Bi-state sage grouse habitat unless they are equipped with anti-perching devices.

Existing special use permits could potentially be affected by implementation of standards and guidelines. Future project-specific analysis could require modification of permits to meet seasonal and height restrictions. As a result, special use permit holders may need to invest in equipment or personnel to meet these requirements. New permits could still be authorized, but will be in compliance with the standards and guidelines. For existing permits, alternatives may be identified that would allow authorization of the permit and meet the standards and guidelines with little additional cost.

In some cases, if new proposed activities were determined to have an adverse effect on sage grouse and they could not be mitigated, permits would have to be modified. Proponents may have to identify other sites for their lands special use. In some cases, proponents may find the mitigations too costly and may withdraw their application. Restrictions on facility placement, limited access, increased administrative costs, and installation of facilities in less-than-optimum sites could all result if applicants applied for authorizations in avoidance areas. Alternative energy projects could be the most impacted because they have potential to be a long-term discrete disturbance with potential for negative effects. There are many acres of public lands outside of the amendment area boundary that could be available for these types of projects. Since interim direction currently guides the issuance of lands special use permits, effects are expected to be minor and limited to certain situations where a previously unpermitted type of use was proposed.

Indirect effects of the proposed action include how adoption of the standards and guidelines would affect management of the current program. Instead of interim direction, standards would be required and standardized throughout the program. This would eliminate uncertainty on the part of the applicant and would assist in consistency between districts and agencies. There could be a benefit to applicants because their requests may be processed more quickly due to standardization and streamlining of the process.

Opportunities for economic growth and benefit to communities may be affected by applicants not proceeding with proposed actions because of mitigations placed on these types of permits. The amount of impact would depend on the kind and expense of the mitigation. However, since standards and guidelines already existed for these types of permits, the impacts are likely to be minor.

Access would not be affected through implementation of the proposed action. The use of existing roads and construction of new roads would not be prohibited through the proposed action. However, future site-specific NEPA could modify or change access to Forest Service or BLM lands due to seasonal or timing restrictions. Since Bi-state sage grouse habitat is currently considered when applicants request access, effects are expected to be minor.

There is a considerable backlog of lands special use requests for projects proposed on Forest Service lands9, and formal application of standards and guidelines may ensure expedited and standardized responses and approvals of permits. Applicants would know in advance the standards and guidelines they are expected to meet and could determine whether following the mitigations would be too costly and time-consuming to proceed.

Cumulative Effects

Cumulative effects to lands special uses management within the amendment area boundary would relate to other administrative or Forest and BLM management activities occurring within or immediately adjacent to the amendment area. Present and foreseeable actions relevant to the cumulative effects analysis for lands special uses include:

- Revision of land management plans for both agencies and associated changes in policy and direction

The spatial boundaries for analyzing the cumulative effects to lands special uses are the amendment area and immediately adjacent public lands, because often, restrictions and

[9] Personal communication, Forest Service, 2013.

management actions on adjacent public lands can shift proponents to areas where restrictions are not in place.

The temporal boundaries are either short term and temporary, occurring during a single season (direct effects), or longer term (indirect effects).

Alternative 1 – No Action. There would be no cumulative effects to lands special uses under this alternative.

Alternative 2 – Proposed Action. Cumulative effects to lands special uses would depend on any new direction proposed in upcoming land management plan revisions. Changes in how lands special uses are managed, along with any seasonal or timing restrictions determined in future NEPA analysis, could result in an incremental reduction of the area available or have a cumulative effect on the lands special use opportunities in Bi-state sage grouse habitat. However, with the majority of the public lands not falling within the cumulative effects analysis area, cumulative effects are expected to be minor.

Economics Issue

Summary

Economic effects are relatively minor for this plan amendment. The goals, objectives, and standards and guidelines proposed in the amendment focus on how the agencies consider different types of future proposed actions to conserve, enhance, and/or restore sagebrush and associated habitats to provide for the long-term viability of the sage grouse.

Since there are no on-the-ground prohibitions on specific types of site-specific actions, the proposed action should not have direct effects. There may be indirect effects associated with the proposed action, which could include fluctuations in the costs passed on to project proponents wanting to develop a resource in the amendment area. There is a potential for additional costs for mitigations attached to a proposed action to reduce overall impacts to sage grouse habitat from the action. Other costs may be incurred because of timing limitations in place to reduce impacts to the sage grouse during specific periods of the year. At a larger scale—the economies of the six counties surrounding the amendment area—there should be very little noticeable effect on the economy or the distribution of income.

Affected Environment

This section discusses the economic impacts of alternatives on specific business sectors within the local economy. The economic study area is made up of counties within Nevada and California that contain Bi-state sage grouse habitat and within which economic conditions might reasonably be expected to change based on alternative management actions.

The socioeconomic study area contains six counties, all containing sage grouse habitat: two counties are in California (Alpine and Mono) and four counties are in Nevada (Douglas, Esmeralda, Lyon, and Mineral) (table 10). While Bi-state sage grouse and its habitat also occur in Inyo, Tuolumne, and Carson City counties, these counties are not consider part of the economic study area for this project because management of sage grouse in those areas is not subject to the management direction proposed in the land use plan amendment.

Table 10. Counties within the economic study area and acres of habitat in each county by agency ownership

Bi-state sage grouse Project Area/Area Analysis State/County	Ownership Acres		
	BLM	Forest Service	Grand Total
California	46,344	579,486	625,831
Alpine (471,503)	24,207	204,825	229,032
Mono (2,006,450)	21,956	374,627	396,583
Nevada	3,029,404	764,080	3,793,484
Douglas (470,857)	161,410	46,964	208,374
Esmeralda (2,288,414)	1,674,508	65,220	1,739,728
Lyon (1,282,642)	407,738	276,287	684,025
Mineral (2,442,031)	718,503	375,603	1,094,106
Grand Total	2,962,159	764,074	3,726,233

Between 1970 and 2011 the combined population of the study area increased 332.6 percent. In comparison the United States population increased by 52.9 percent and the populations of California and Nevada increased by 88.2 percent and 452.1 percent, respectively. The growth in population was followed by a growth in employment. During the same period (1970 thorugh 2011) employment in the study area grew 244.8 percent. In the United States there was a 92.6 percent increase in employment, in California a 120 percent increase and a 484 percent increase in Nevada. These statistics indicate that the states and the study area have experienced 40 years of steady growth that exceeds that of the United States. Long-term steady growth of population, employment, and real personal income is generally an indication of a healthy, prosperous economy.

The following section provides brief summaries of the demographic and economic trends for each of the five study area counties. Refer to "Study Area Demographic and Economic Data" (Headwaters 2013) for complete demographic and economic data tables (see project record). The county descriptions below are primarily derived from county websites, and data from the U.S. Census Bureau.

Nevada

Four counties in Nevada are wholly or partially within the planning area (table 10). Land area and population are not necessarily correlated.

Douglas County. Douglas County is located on the northern edge of the project area. Due to fertile soils on the valley floor, Douglas County has some of the most productive agricultural areas in the State and is able to support the population centers of Minden and Gardnerville. Many retirees also come to Douglas County for the scenic values and temperate climate, while many tourists frequent the area for recreation and gaming opportunities (Douglas County, Nevada 2012). These populations support the four largest employment sectors in the area: education, health care, entertainment, and recreation (Headwaters 2013).

In 2011 the population of Douglas County was 47,058 people, a 569 percent increase from 1970. This is the largest increase in population among the six counties in the study area and exceeds the growth rate of Nevada by approximately 119 percent. Douglas County is also the most suburban county in the study area, providing housing and retail opportunities outside Carson City. Recreation opportunities range from fishing and river rafting to horseback riding and ATV

tours. Hiking and biking are also major recreation activities. Over the past several years, Douglas County has seen an increase in demand for healthier tourism activities, prompting them to create a network of both urban bike paths and mountain biking trails.

For the 2006 to 2010 average, the median household income in the county was $60,721. Per capita income was $35,239, and 7.9 percent of people fell below the poverty level (U.S. Census Bureau 2010c). Unemployment rates have increased over the past several years, with a low of 4.3 percent in 2004 and a high of 14.5 percent in 2010. The unemployment rate for 2011 was 14.4 percent (Headwaters 2013).

Esmeralda County. Esmeralda County is a rural county with a large amount of undeveloped open space. The largest town in the county is Goldfield with an estimated population of 415 (Esmeralda County 2011). Esmeralda County experienced the slowest growth between 1970 and 2011 with an increase of 24 percent. This growth rates is half that of the United States and 7 percent of the study area. The county has a population of 897 and has experienced a 7.4 percent decrease in population over the last 10 years (Headwaters Demographics 2013).

Today, the sparsely populated county continues to rely on a mining, ranching, and agricultural economy, as well as tourism, recreational resources, and an emerging potential for renewable energy production (Esmeralda County 2010). Recreationally, Esmeralda County offers hunting, fishing, hiking, and four-wheel drive trails, as well as old mining camps and ghost towns (Esmeralda County 2011). There is a significant population of retirees in Esmeralda County. Fish Lake Valley, for example, has a 30 to 40 percent retirement base; and recreation, especially birding, is attractive for retirees. Median household income was $44,118 (per 2005 to 2009 average). Per capita income was $30,763; and 7 percent of people fell below the poverty level. Unemployment rates in the county have ranged from a high of 8.6 percent in 2000 to a low of 3.2 percent in 2007. Unemployment in 2010 was 8.3 percent (U.S. Department of Labor, Bureau of Labor Statistics 2011). Esmeralda County had the largest proportion of government-employed workers in 2008, at 20 percent, with the national average at 13.5 percent (Headwaters 2013). The majority of government employees are with state and local governments.

Lyon County. Lyon County is located in western Nevada, bordering California on its southern edge. The economy relies heavily on agriculture, both in rural areas and near the population centers of Fernley and Yerington (City of Fernley, Nevada 2012). Manufacturing and construction are also important employment sectors in Lyon County (U.S. Census Bureau 2010c). In the 1950s, the Anaconda Mine opened just west of Yerington and was the third largest open pit copper mine in the world until it shut down in 1978 (City of Yerington, Nevada 2012). Lyon County has transformed from mostly rural areas to suburban areas as the Northern Nevada region continues to grow. For 3 out of the past 10 years, it has been one of the fastest growing counties in the United States (Lyon County, Nevada 2012).

In 2011, the population of Lyon County was 51,937 people, a 50.5 percent increase since 2000. The population density is approximately 26 people per square mile (U.S. Census Bureau 2012a). Due to the close proximity to various lakes and rivers, freshwater fishing and boating are popular recreation activities, as is camping, visiting historic sites, and range shooting. There is a possibility that the Anaconda Mine will be reopened in the near future for resumed production; however, there is a current effort by the Environmental Protection Agency and the mine's current owner to clean up the toxic remains at the site.

For the 2006 to 2010 average, the median household income for Lyon County was $48,433. Per capita income was $21,041, and 12.8 percent of people fell below the poverty level (U.S. Census

Bureau 2010c). Unemployment rates have increased over the past several years, with a low of 5.5 percent in 2004 and a high of 17.8 percent in 2010. The unemployment rate for 2011 was 17.5 percent (Headwaters 2013).

Mineral County. Mineral County is located in southwestern Nevada, bordering California. Hawthorne is the county seat and the largest population center in the county (Mineral County, Nevada undated). Mining has been historically very important to the area, and there continues to be active mining operations as well as a high potential for future mineral extraction. In 1930, the Naval Ammunition Depot, now called the Hawthorne Army Depot, was established. The depot is used for ammunition storage and maintenance and, at its peak during 1945, employed over 5,600 people (Nevada Division of Environmental Protection 2012). Although the current employment levels are much lower and it is now run by a private contractor, the depot remains vital to the economy of Hawthorne and Mineral County. The Marine Corps Mountain Warfare Training Center, located near Bridgeport, California, also utilizes NFS lands and BLM land in Mineral County to perform training exercises.

In 2010, the population of Mineral County was 4,760 people, a 6.1 percent decrease from 2000. Walker Lake, just north of Hawthorne, provides many recreation opportunities, including fishing and boating. Hunting, rock hounding, and OHV tours are also popular activities.

Mineral mining activities in the area help support the local economy, as well as hard rock mining. There is some interest in geothermal energy production near Aurora.

For the 2006 to 2010 average, the median household income for Mineral County was $35,446. Per capita income was $23,226; and 19.1 percent of people fell below the poverty level (U.S. Census Bureau 2010c). Unemployment rates have increased over the past several years, with a low of 5.4 percent in 2004 and a high of 13.9 percent in 2010. The unemployment rate for 2011 was 13.3 percent (Headwaters 2013).

California

The following California counties contain fragments of sage grouse habitat managed by the Carson and Bridgeport ranger districts. The descriptions below describe the entire county, which may not present an accurate representation of the lands with sage grouse habitat or populations.

Alpine County. Alpine County is located in eastern California, just south of Lake Tahoe and bordering Nevada. It is the smallest county in California by both size and population. Alpine County was formed when prospectors and pioneers came to the eastern Sierra looking for silver after the Comstock Lode began in 1859, forming temporary mining towns and producing a sudden spike in population. When very little silver was discovered, most people left, dropping the population to a few hundred people by the 1920s. In the past few decades, however, outdoor recreation and tourism have increased the population and created a new, steady source of economic activity (Alpine County Chamber of Commerce 2012).

The population of Alpine County was 1,167 people in 2011, which is a 3.4 percent decrease since 2000. The population density of the area is approximately two people per square mile (U.S. Census Bureau 2012a). There are no incorporated towns in Alpine County. Much of the economy is supported by tourism, primarily based on two major ski resorts and the outdoor recreation industry. About 96 percent of the land is under public ownership, providing plenty of space for snow sports, hunting and fishing, camping, and rafting. Education and healthcare and public administration are also strong sectors of the economy in Alpine County.

For the 2006 to 2010 average, the median household income was $63,478. Per capita income was $32,159; and 13.1 percent of people fell below the poverty level (U.S. Census Bureau 2010c). Unemployment rates have increased over the past several years, with a low of 6.6 percent in 2006 and a high of 15.4 percent in 2010. The unemployment rate for 2011 was 15.1 percent (U.S. Department of Labor, Bureau of Labor Statistics 2012). These numbers do not account for expected seasonal layoffs that are common for recreation employers, such as ski resorts (Headwaters 2013).

Mono County. Mono County is located in the east central portion of California, to the east of the Sierra Nevada between Yosemite National Park and Nevada. Bridgeport is the county seat and Mammoth Lakes is the only incorporated town in the county.

The population of Mono County has grown 9 percent between 2000 and 2011, with approximately 47 percent of the population between the ages of 20 and 50-years old and a median age of 36.5 years.

Mono county employment statistics indicate an emphasis on outdoor recreation in the economy with close to 30 percent of the working population employed in the art, entertainment, recreation, and accommodation sector.

Economic Conditions

Economic analysis is concerned with the production, distribution, and consumption of goods and services. This section provides a summary of economic information, including trends and current conditions. It also identifies and describes major economic sectors in the socioeconomic study area that can be affected by management actions (table 11). Economic activities that rely or could rely on public lands, such as recreation and livestock grazing, are the economic activities that are most likely to be affected by the proposed amendment.

Employment in the study area includes the 13 sectors identified in table 11. This table provides a measure of how employment is distributed through in the counties and, by association, how the sectors contribute to that economy. For instance, the education, health care, and social assistance sector, on average, employees 15.9 percent of the workforce in the six counties. This sector is a driver for the economy given the stable workforce in this sector, however there are exceptions. The table points out how important the agriculture, mining, and hunting and fishing sector is to Esmeralda County, and the role art, entertainment, accommodation, and food plays in the Mono County economy. For comparison, the agriculture, mining, and hunting and fishing sector in Esmeralda County includes 30.9 percent of the work force. In the six county study area this sector only employs 2.3 percent of the work force and it is represented by 1.9 percent of the national workforce.

To break this sector into its two primary components, agriculture in Esmeralda County provides employment for 36 individuals (Headwaters Agriculture 2013) that is equivalent to 10.6 percent of the work force. Mining provides employment to 15 individuals out of the 340 civilian employees over the age of 16 (Headwaters Mining 2013). There is no data for hunting and fishing employment for the six counties.

Table 11. Economic sectors, employment, and personal income

Category	California		Nevada				County Region	U.S.
	Alpine County	Mono County	Douglas County	Esmeralda County	Lyon County	Mineral County		
Civilian employed population >16 years	529	8,001	21,172	340	20,198	1,761	52,001	141,832,499
Agriculture, forestry, fishing & hunting, mining	6	313	359	105	344	84	1,211	2,669,572
Construction	42	669	1,999	14	1,611	98	4,433	9,642,450
Manufacturing	40	179	1,824	13	2,478	135	4,669	15,281,307
Wholesale trade	4	4	656	5	431	25	1,125	4,158,689
Retail trade	14	851	2,657	19	3,009	167	6,717	16,336,915
Transportation, warehousing, and utilities	28	219	695	14	1,545	93	2,594	7,171,438
Information	7	99	113	24	258	0	501	3,256,311
Finance and insurance, and real estate	6	805	1,389	15	1,140	55	3,410	9,738,275
Professional, scientific, management, administration, & waste management	46	665	1,801	5	1,163	219	3,899	14,942,494
Education, health care, & social assistance	129	1,227	3,736	51	3,210	312	8,665	31,927,759
Arts, entertainment, recreation, accommodation, & food	52	2,237	3,476	6	2,029	168	7,968	12,779,583
Other services, except public administration	55	237	868	21	932	26	2,139	6,960,820
Public administration	100	496	1,599	48	2,048	379	4,670	6,966,886
Percent of Total								
Agriculture, forestry, fishing & hunting, mining	1.1	3.9	1.7	30.9	1.7	4.8	2.3	1.9
Construction	7.9	8.4	9.4	4.1	8.0	5.6	8.5	6.8
Manufacturing	7.6	2.2	8.6	3.8	12.3	7.7	9.0	10.8
Wholesale trade	0.8	0.0	3.1	1.5	2.1	1.4	2.2	2.9
Retail trade	2.6	10.6	12.5	5.6	14.9	9.5	12.9	11.5
Transportation, warehousing, and utilities	5.3	2.7	3.3	4.1	7.6	5.3	5.0	5.1
Information	1.3	1.2	0.5	7.1	1.3	0.0	1.0	2.3

Category	California		Nevada				County Region	U.S.
	Alpine County	Mono County	Douglas County	Esmeralda County	Lyon County	Mineral County		
Finance and insurance, and real estate	1.1	10.1	6.6	4.4	5.6	3.1	6.6	6.9
Professional, scientific, management, administration, & waste management	8.7	8.3	8.5	1.5	5.8	12.4	7.5	10.5
Education, health care, & social assistance	24.4	15.3	17.6	15.0	15.9	17.7	16.7	22.5
Arts, entertainment, recreation, accommodation, & food	9.8	28.0	16.4	1.8	10.0	9.5	15.3	9.0
Other services, except public administration	10.4	3.0	4.1	6.2	4.6	1.5	4.1	4.9
Public administration	18.9	6.2	7.6	14.1	10.1	21.5	9.0	4.9

Data Sources: U.S. Department of Commerce, 2012. Census Bureau, American Community Survey Office, Washington, D.C.

The agriculture, mining, and hunting and fishing sectors are commodities-based sectors in the study area that provide resource-based employment in the study area. Portions of these sectors rely on the availability of resources on public lands. Regulatory mechanisms that limit access to resources on public lands could affect businesses in this sector dependent on the resources. Based on sector-specific data from the U.S. census, Esmeralda County has the majority of job opportunities: 4.4 percent of the employment opportunities are in mining-related jobs and 10.6 percent are in agriculture. According to the Agriculture summary from Headwaters (2013) there are 19 farms in Esmeralda County and 3 of those are categorized as ranches. These ranches would be the only ones with the potential to use public lands as part of their operations.

The individual county numbers are slightly deceiving; they are based on the total private employment for the individual counties (340 persons greater than 16 years of age [Headwaters Demographics 2013]). The 10.6 percent of jobs in the agricultural sector in Esmeralda County represent approximately 36 individual jobs out of the total workforce population of 340 individuals. In comparison, government employs 96 individuals (28 percent), 88 state and local, and 6 Federal (Headwaters 2013).

Looking at the total private employment in the study area, Headwaters (2013) indicates that there are 340 private jobs in Esmeralda County. Fifteen of those are in the Mining sector. No mining proprietors are counted in the 67 total business proprietors for the county. Mining does occur in Esmeralda County, so we assume that to support the mining ventures in Esmeralda County the proprietors are from outside the county and a number of the workers for these mines also travel from outside the county (we have little data beyond this).

The travel and tourism sector includes a combination of: retail trade, passenger transportation, arts, entertainment, recreation, and accommodation and food employees (Headwaters 2013). Tourism-related employment is a substantial portion of total employment in the study area (except Esmeralda County), but it has declined by 27.2 percent between 1998 and 2011 (Headwaters Tourism 2013). During this same period non-travel and tourism employment grew by approximately 21.9 percent (Headwaters Tourism 2013). In 2011 Alpine County had the largest percent of total travel and tourism employment (89.6 percent) and Esmeralda County had the smallest (1.7 percent). The average for the study area was 38 percent (Headwaters Tourism 2013). In 2011 accommodations and food was the largest component of travel and tourism-related employment (32.6 percent of total jobs) in the study area, and passenger transportation was the smallest (0.2 percent of total jobs).

Employment results for the socioeconomic study area as a whole are driven mostly by Douglas, and Lyon counties, which combined account for approximately 79 percent of the employed workers in the study areas. The industries with the largest numbers of employees are the education, health care, and social assistance field and the art, entertainment, recreation, and accommodation and food service. When compared county to county, the percent of workers in any one sector is fairly consistent with the percent of employees in that sector and within the Study Area (table 11).

For the other counties retail trade, education, art and entertainment (which includes accommodations), and public administration all have high employment numbers when compared to the population of the counties and the overall number of employees.

Environmental Effects

Management Indicators. A qualitative analysis is used to discuss the potential impacts of the proposed action on the economic well-being of the study area.

Alternative 1 – No Action

Direct/Indirect Effects. There would be no direct or indirect effects to the economic conditions in the study area if the no-action alternative was selected. It is important to note that many of the regulatory mechanisms identified in the proposed amendment are already being applied to projects proposed in sage grouse habitat. Timing limitation to protect breeding, nesting, and broad-rearing habitat are already being applied when developing project design features and mitigations within habitat. For the recent 2012 Humboldt-Toiyabe National Forest Geothermal Leasing project, the decision stipulated there would be no surface occupancy in most priority sage grouse habitat. Special use permit applications for activities conducted in sage grouse habitat are currently subject to timing limitations and 3 kilometer buffers during breeding, nesting, and brood rearing seasons. Authorization of mineral exploration and mine development are also required to adhere to project design features or mitigations put in place to protect sage grouse and sage grouse habitat. On the Forest portions of the habitat, these are being applied as best practices, even though mitigation measures and best practices are not currently included in plan standards, guidelines, and other plan components. On the BLM ongoing project analysis is being conducted following the Interim Management Policies and Procedures adopted December 5, 2012 (CCD USDI BLM 2012). These interim directions expire September 30, 2013. Currently the potential effects to sage grouse and habitat are analyzed for each proposed project on the Forest Service or BLM administered lands. Through the analysis process, mitigation in the form of avoidance and timing limitations are incorporated into the proposed action or plan of operations as design features or mitigations to reduce impacts to the species. Selection of the no-action alternative would not change the methods or assumptions employed regarding types of mitigation considered under alternatives during the NEPA analysis of site-specific projects that may occur in Bi-state sage grouse habitat (table 12).

In the no-action alternative there is no guarantee that the mitigations would be consistently applied for each project type that occurs on public lands. Potential effects of the no-action alternative on ongoing activities is summarized in table 12.

The BLM IM expires on September 30, 2013; it is unclear whether it will be extended. If not, the level of regulatory measures applied to preserve sage grouse and habitat will be returned to levels identified in 2010 when the USFWS determined that the risks to sage grouse were a result of inadequate regulatory measures in the land management plans used by the Forest Service and BLM. This inconsistent policy for managing activities conducted in sage grouse habitat could create uncertainty for potential operators and permit holders who are faced with making decisions about projects and activities.

Table 12. Potential effects of both alternatives on ongoing activities

Resource Area	Alternative 1 – No Action	Alternative 2 – Proposed Action
Livestock Management	Permitted numbers would not decrease.	Permitted numbers would not decrease as a direct result of this amendment.
	Timing or placement of livestock would not change from current authorized use and as specified in IM.	Timing or placement of livestock may change from current authorized use based on season of use, location, and range condition.
	No restrictions on where/when livestock could graze in habitat unless specified in the IM.	Some changes to where/when livestock could graze in habitat.
Mineral Operations	Plans of mineral proposals would continue to be analyzed utilizing best available science.	Plans of mineral proposals would continue to be analyzed utilizing best available science and application of proposed directions.
	Continued application of restrictions to timing or placement of discretionary saleable, solid leasable mineral activities, and renewable energy projects and as specified in IM.	Application of standards and guidelines related to timing or placement of discretionary saleable and solid leasable mineral activities or renewable energy projects.
	Non-discretionary locatable activities would continue to be permitted under current management direction and IM.	Non-discretionary locatable activities would continue to be permitted; mitigation measures may increase some operating costs.
Travel/ Tourism	No restrictions to individuals visiting the public lands.	Seasonal road closures may limit vehicle use in some areas.
	Outfitter and guide permits unchanged following current sage grouse BMPs or guidance to avoid sage grouse habitat and as specified in IM.	Outfitter and guide permits would be reviewed to take sage grouse habitat and disturbance into consideration; if outfitter/guides are using areas outside sage grouse habitat, there would be no change.
	No change to motorized access or seasonal closures on designated roads or trails, except as identified in the motor vehicle use map.	On NFS lands no change to motorized access or seasonal closures on designated roads or trails, except as identified in the motor vehicle use map; maps could be updated annually.
Special Uses	Special use permits will continue to be processed.	Special use permits will continue to be processed.
	Events will be allowed to continue with current level of Bi-state sage grouse restrictions and as specified in IM.	Events will be allowed with timing and location limitations as needed to conserve, enhance, or restore grouse habitat; mitigation to reduce impact to sage grouse or habitat could increase operating costs for some events.

Resource Area	Alternative 1 – No Action	Alternative 2 – Proposed Action
	New rights-of-way allowed with current sage grouse BMPs or as specified in IM.	New rights-of-way limited to areas outside habitat or to existing rights-of-way; standards and guidelines applied to reduce impacts from ground disturbance and structures; mitigations required to reduce potential impacts from proposed actions may increase operating costs.
Alternative Energy	No change to leasable resources.	Applications to lease may be declined depending on location.
	Allowed following current sage grouse BMP and as specified in IM.	Stipulations applied to lease parcels to reduce impacts to sage grouse and habitat; standards and guidelines applied to site-specific applications; mitigations applied to reduce effects to the extent practicable.
	Site-specific analysis required to determination potential effects.	Standards and guidelines and site-specific mitigations may increase operating costs.

Cumulative Effects

There would be no cumulative effects associated with the no-action alternative since there are no direct or indirect effects to the economy in the study area associated with this alternative.

It is speculative to draw conclusions from the limited data available. Census data provide an indication of trends over the past few years, but they do not provide a clear picture of future trends. For the data available, the trends visible are a decrease in the agricultural sector and the increase in recreation and accommodation sectors. The no-action alternative would maintain the status quo since the current management direction was adopted.

Summary of Effects. Under the no-action alternative, there would be no change to current management direction. There would be no effect on the economic well-being of the study area because there would be no measurable change. It would be speculative to assign a quantitative value, either positive or negative to those impacts.

Alternative 2– Proposed Action

Direct/Indirect Effects. There would be no direct impacts expected from adoption of the proposed action. Economic impacts in the study area would result not from the adoption of a particular regulatory measure, but from the implementation of that measure at the project-specific level, and then only after a site-specific NEPA analysis. For example, Standard 2j requires marking fences at an interval to reduce the occurrence of birds colliding with the fence when they are flushed. If adopted, over time, the Forest and BLM and any project proponents that may have the responsibility to maintain fences will need to purchase and install material to mark the fences. However, the agencies and permittees have been marking fences for the past few years. Adding the requirement to the land use plans is not going to increase the cost on these entities to do this work.

Other standards have already been practiced in the planning area. Mineral companies' approval for proposals on NFS land have been required to use genetically and climatically appropriate weed-free-native seed sources for reclamation projects for several years. Timing limitations and buffers have also been in place since the mid-2000s to avoid noise and other impacts during breeding, nesting, and brood-rearing seasons. While these have not always been applied to recreation permits, the timing limitation does not preclude the types of activities that occur in the area. Potential effects of the proposed amendment ongoing activities is summarized in table 12.

Standards that require proponents of projects to mitigate potential long-term negative impacts to sage grouse habitat may result in additional costs at the project level. Timing limitations, application of buffers around leks and habitat, and use of site-specific seed mixes would continue to be applied to projects. These are not expected to increase operating cost. Undefined "mitigations" may increase costs. Mitigations could include habitat restoration work either inside or outside project area boundaries. These would be defined during site-specific project NEPA and be based on achieving a "no net loss of habitat" goal and reducing long-term impacts. These additional costs could have an effect on the proponent's income, or profit. It is unlikely that it would result in wide spread changes to the economics of the project area, recognizing that many mitigation measures are already being implemented (see discussion of direct/indirect effects for the no-action alternative).

The proposed action provides direction on how activities can occur and, to some extent where. However, it does not prohibit specific types of activities. Special use permit applicants and other applicants or proponents of projects, such as mineral exploration operators, may be asked to

mitigate any long-term disturbance that would occur in sage grouse habitat as a result of their request. This may add costs to certain types of projects, but while many of the mitigations are currently required either under current direction or required best management practices, it is difficult to say where or how much the added costs would occur. Any potential economic impact to the economics of the study area is expected to be limited to operators working exclusively on NFS or BLM lands. The magnitude of these potential impacts is unknown. At the scale of the study area the economic impacts are expected to be small.

Cumulative Effects

There is a potential that the relatively minor impacts associated with the sage grouse could combine with regulatory mechanisms or land use plan direction developed during the revision process. Both agencies have been operating under plans adopted years ago and changes in the environmental understanding of the area, shifts in economic trends from rural to urban or sub-urban, and increased recreation demands, may shift mitigation burdens from one sector to another as land use in the area evolves from one economic model to another. The proposed amendment could require expenditures by project proponents who have not been required to incur these costs in the past. These expenditures are not likely to result in a shift in the cumulative economic well-being of the study area.

This study area has weathered recessions and record growth over the last 40 years. During that period it has experienced long-term steady growth of population, employment, and real personal income. These are generally an indication of a healthy prosperous economy. Selection and implementation of the proposed amendment should not have a large enough impact to alter the course of the 40 years of growth the area has been experiencing.

Effects to Wildlife

Executive Summary

The analysis area consists of National Forest system and BLM lands that have been identified as Bi-state sage grouse habitat (figure 1). The management direction proposed in the action alternative would apply to designated Bi-state sage grouse habitats and linkage areas within the project area that have been identified as sage grouse habitat. However, there are no areas designed as linkage areas within the project area.

The analysis area consists of 650,746 total acres of identified Bi-state sage grouse habitat on Forest Service and BLM lands. Of these, about 426,809 acres (66 percent) occur on Forest Service lands and 223,935 acres (44 percent) are on BLM lands. Both the Bridgeport and Carson ranger districts on the Humboldt-Toiyabe National Forest contain Bi-state sage grouse habitat, as do both the Carson City and Battle Mountain BLM Districts. Federal, state, and private ownerships occur within and outside the National Forest and BLM District boundaries, and include sage grouse habitat.

Summary of Determinations

Sierra Nevada bighorn Sheep. It is my determination that the Greater Sage-grouse Bi-state Distinct Population Segment Forest Plan Amendment project **may affect, but is not likely to adversely affect Sierra Nevada bighorn sheep or its critical habitat.**

Federally Listed Species. It is my determination that the Greater Sage-grouse Bi-state Distinct Population Segment Forest Plan Amendment project **will not affect the following Federally-listed species or their designated critical habitat**: **Carson wandering skipper, southwestern**

willow flycatcher, mountain yellow-legged frog (Southern California DPS), California condor, least Bell's vireo.

Species Proposed For Federal Listing. It is my determination that the Greater Sage-grouse Bi-state Distinct Population Segment Forest Plan Amendment project **will not affect the following species proposed for federal listing or their proposed designated critical habitat**: **mountain yellow-legged frog (north of Tehachapi Mountains), Yosemite toad.**

Federal Candidate Species: It is my determination that the Greater Sage-grouse Bi-state Distinct Population Segment Forest Plan Amendment project **may affect individuals, but is not likely to contribute to the need for Federal listing or result in loss of viability for the following Candidate species in the planning area**: **Greater sage-grouse (Bi-state DPS).**

Sagebrush-associated Sensitive Species. It is my determination that the Greater Sage-grouse Bi-state Distinct Population Segment Forest Plan Amendment project **may affect individuals, but is not likely to result in a trend toward Federal listing or loss of viability for the following sagebrush-associated sensitive species in the planning area: pygmy rabbit, dark kangaroo rat, desert bighorn sheep, loggerhead shrike, sage thrasher, and Brewer's sparrow.**

Pinyon-juniper-associated Sensitive Species. It is my determination that the Greater Sage-grouse Bi-state Distinct Population Segment Forest Plan Amendment project **may affect individuals, but is not likely to result in a trend toward Federal listing or loss of viability for the following pinyon-juniper-associated sensitive species in the planning area**: **pinyon jay, ferruginous hawk, pallid bat, silver-haired bat, hoary bat, California myotis, western small-footed myotis, long-eared myotis, fringed myotis, long-legged myotis, Yuma myotis, western pipistrelle.**

Other Regional Forester's and Nevada BLM Sensitive Species. It is my determination that the Greater Sage-grouse Bi-state Distinct Population Segment Forest Plan Amendment project **will not affect all other Regional Forester's and Nevada BLM sensitive species considered in this biological assessment/biological evaluation.**

Select Management Indicator Species. It is my determination that the Greater Sage-grouse Bi-state Distinct Population Segment Forest Plan Amendment project **will benefit habitat and will not cause populations to trend downward, for the following management indicator species: mule deer, greater sage-grouse.**

All Other Management Indicator Species. It is my determination that the Greater Sage-grouse Bi-state Distinct Population Segment Forest Plan Amendment project **will have no impact on all other MIS species considered in this assessment.**

Migratory Birds. It is my determination that the Greater Sage-grouse Bi-state Distinct Population Segment Forest Plan Amendment project **will not lead to a downward trend in migratory bird populations and may improve habitat in the long-term for some species covered by the Migratory Bird Treaty Act.**

For full details about all the above-listed determinations, please see the biological evaluation/biological assessment in the project record. The following section highlights only the Bi-state sage grouse and those species that are depended on the sage grouse habitat. For

additional information about the other species, please see the biological evaluation/biological assessment in the project record.

Additional Recommendations or Conservation Measures

1) The following additional conservation measures are recommended to reduce negative impacts to pinyon jays:

Recommended Conservation Measures:

- Prior to treatments in pinyon-juniper, conduct clearance surveys for nesting pinyon jays, emphasizing coverage of mature and old pinyon-juniper stands.
- Avoid treatments in roost sites and areas used by nesting colonies (buffer distance according to Great Basin Bird Observatory recommendations).
- Retain high priority trees (most likely to consist of mature and old pinyon-juniper).

These conservation measures are also expected to benefit retention of nest trees for ferruginous hawks.

2. The following additional conservation measure is recommended to reduce negative impacts to migratory birds:

Recommended Conservation Measure

- Prioritize timing of treatments that would remove pinyon-juniper to occur outside the nesting season of common poorwill, gray flycatcher, Virginia's warbler, gray vireo, juniper titmouse, and green-tailed towhee.

Affected Environment and Environmental Consequences – Bi-state Sage Grouse

Because of the importance of Bi-state sage grouse and their habitat in this effort, they will be singled out and discussed specifically; while the remainder of species will be grouped together by habitat affinity for this analysis due to the similar nature of the habitats they occupy and the potential effects to their habitat components.

Status

The Bi-state Sage Grouse is a candidate for Federal listing, and a sensitive species on the Forest and Nevada BLM.

Existing Condition

Information used to describe existing condition for Bi-state sage grouse populations and habitats was derived from the Bi-state Action Plan – Past, Present, and Future Actions for the Conservation of the Greater Sage-grouse Bi-state Distinct Population Segment (Bi-state Technical Advisory Committee 2012), hereby incorporated by reference. Pertinent information, in addition to information from other sources, is summarized below.

Overview. The Bi-state DPS comprises a genetically unique meta-population of greater sage-grouse that defines the far southwestern limit of the species' range. This genetic distinction may be the result of natural geologic events and subsequent long-term geographic isolation based on prevailing physiographic and habitat conditions.

The range of the Bi-state DPS occurs over an area approximately 170-miles long and up to 60-miles wide. It includes portions of five counties in western Nevada: Douglas, Lyon, Carson City, Mineral, and Esmeralda; and three counties in eastern California: Alpine, Mono, and Inyo.

The Bi-state DPS is characterized by available genetic, population, and habitat data as a genetically diverse, locally adapted meta-population consisting of several relatively small, localized breeding populations distributed among suitable sagebrush habitats throughout the Bi-state area.

Two core sage grouse populations, Bodie Hills and Long Valley, occur in the Mono County portion of the Bi-state area. These core areas annually comprise approximately 94 percent of all strutting males counted during annual lek surveys in California. Public lands administered by the BLM and Forest Service and private lands in the Bi-state DPS area provide important habitat for populations of greater sage-grouse (Bi-state Technical Advisory Committee 2012).

Population and Telemetry Data Summaries. Greater sage-grouse have comparatively slower potential population growth rates than other species of grouse and display a high degree of site fidelity to seasonal habitats. While these natural history characteristics would not limit greater sage-grouse populations across large geographic scales under historical conditions of extensive habitat, they may contribute to local declines where humans alter habitats, or when natural mortality rates are high in small, isolated populations such as in the case of the Bi-state DPS. The best estimates for the Bi-state DPS of the greater sage-grouse place the spring breeding population between 2,000 and 5,000 individuals annually. Based on radio-telemetry and genetic data, the local populations of greater sage-grouse in the Bi-state area appear to be isolated to varying degrees from one another. In addition to the potential negative effects to small populations due to genetic considerations, small populations such the Bi-state DPS are at greater risk than larger populations from stochastic events, such as environmental catastrophes or random fluctuations in birth and death rates, as well disease epidemics, predation, fluctuations in habitat available, and various other factors (USDI Fish and Wildlife Service 2010).

Population information contained in the Bi-state Action Plan is described by population management unit. The Bi-state sage grouse Amendment Project Area contains all or portions of five of six population management units described in the Bi-state Action Plan (Pine Nut, Desert Creek/Fales, Bodie Hills, Mount Grant, and White Mountains population management units). In addition, more specific information concerning Bi-state sage grouse seasonal locations, movements, home range size, and mortality factors is described by Casazza et al. (2007).

Risk Factors. The Bi-state Action Plan identified, ranked, and summarized sage grouse risk factors for each of the Bi-state population management units. Table 13 displays the risk factors, ranked low to high, for each of the population management units. Among the risk factors, only pinyon-juniper encroachment is ranked ‘high’ for all population management units, while wildfire is ranked ‘high’ for four of five population management units and ranked ‘moderate’ in the White Mountains. Risk due to invasive species (cheatgrass) is ranked ‘high’ in the Pine Nut Population Management Unit, and ‘low’ to ‘moderate’ in the remaining population management units within the assessment area. Other high ranking risk factors within the Pine Nut Population Management Unit include urbanization, disturbance due to OHV use, linear infrastructure, and wind energy development. Linear infrastructure was also ranked ‘high’ in the Mount Grant Population Management Unit, as were mineral energy exploration and development and geothermal leasing and development.

Table 13. Bi-state sage grouse population management unit risk factors

Risk Factor	PMU/Risk Level				
	Pine Nut	Desert Creek/ Fales	Bodie Hills	Mount Grant	White Mountains
Wildfire	High	High	High	High	Moderate
Pinyon-Juniper Encroachment	High	High	High	High	High
Invasive Species (Cheatgrass)	High	Low	Low	Moderate	Low
Urbanization	High	NI[1]	Moderate	NI	Moderate
Human Disturbance	High (OHV)	Moderate	NI	Low	Low
Infrastructure (Linear)	High	High	Moderate	High	Low
Predation	Moderate	Moderate	Low	Low	Low
Disease (West Nile Virus)	Not yet determined	Moderate	Low	Low	Low
Wind Energy Development	High	NI	NI	NI	NI
Wind Energy Testing	Low	NI	NI	NI	NI
Mineral Exploration and Development	NI	NI	Low	High	NI
Geothermal Leasing and Development	NI	NI	NI	High	NI
Sagebrush Habitat Conditions	NI	Moderate	NI	NI	NI
Grazing–Wild Horses	Moderate	NI	Low	Moderate	Moderate
Grazing–Permitted Livestock	Low	Low	Low	Low	Low
Recreation	NI	NI	NI	Low	NI

[1] NI = Not identified as a ranked risk factor

Source: Bi-state Technical Advisory Committee, Nevada and California (2012)

Habitat Connectivity. Loss of habitat connectivity within and between the Pine Nut, Desert Creek-Fales, Bodie Hills, and Mount Grant population management units is identified as a concern for long-term conservation. The major factor contributing to loss of connectivity for all population management units is pinyon-juniper encroachment, with recent wildfires and urbanization also identified as contributing factors for the Pine Nut Population Management Unit (Bi-state Technical Advisory Committee 2012).

Environmental Consequences

Fire

Most sagebrush species are killed by wildfires and recovery requires many years, especially after large fires. Contiguous late-seral sagebrush sites are at high fire risk, as are large blocks of continuous decadent sagebrush. Prior to recovery, these sites are of limited use by Bi-state sage grouse, except along the edges and in unburned islands. As a result of this loss of habitat, fire has been identified as a primary risk factor to Bi-state sage grouse populations. Depending on the species and the size of a burn, a return to a full pre-burn community cover can take 13 to 100 years (Connelly et al. 2004), depending on site conditions at the time of the burn. In addition, fires can result in a reduction of invertebrate food sources and may facilitate the spread of invasive weeds.

Cheatgrass readily invades sagebrush communities especially in drier (less than 12 inches of annual precipitation), lower elevation areas, and disturbed sites after wildfire (Balch et al. 2013). Cheatgrass changes historical fire patterns by providing an abundant, continuous, and easily ignitable fuel source that facilitates rapid fire spread. While most sagebrush subspecies are killed by fire and slow to reestablish, cheatgrass recovers within 1 to 2 years of a fire event from seed in the soil. This leads to rapid re-occurring fire cycles that prevent sagebrush reestablishment (USDI Fish and Wildlife Service 2010).

Forest Service management to prevent or control wildfires also affects Bi-state sage grouse and habitat. Increased human activity and noise associated with fire suppression and prescribed fire in areas occupied by sage grouse could affect reproduction, hiding, or foraging behavior. Important habitats could be altered because of the use of heavy equipment, hand tools, and noise. In addition, suppression may initially result in continued progression of pinyon-juniper encroachment in some areas. In the initial stages of encroachment, fuel loadings remain consistent with the sagebrush understory. As pinyon-juniper encroachment advances and the understory begins to thin, the depleted understory causes the stands to become resistant to wildfire and further alters fire return intervals. During years of high fire danger, the resulting heavy fuel loadings in these stands can contribute to large-scale wildfire events and confound control efforts due to extreme fire behavior.

Alternative 1 (No-Action)

Direct/Indirect Effects. Both prescribed fire and non-fire fuels treatments are allowed in current land and resource management plans and resource management plans, and fire suppression is prioritized to protect human life and specific resource values at risk. Some emphasis is placed on protection of sage grouse habitats. For example, under the Tonopah RMP, direction states that wildfires that threaten resources such as sage grouse strutting grounds will be kept to minimum acres. These policies do not avoid the use of prescribed fire in sagebrush habitat nor prioritize protection of sagebrush; thus, loss of habitat to wildfire and prescribed fire would continue. The no-action alternative would have the fewest restrictions for fuels management actions and has a high potential for vegetation disturbance leading to habitat loss and fragmentation. As this alternative does not prioritize fire operations beyond what has already been determined in the fire management plans for the area, potential impacts may include: removing or degrading habitat, disrupting reproduction, causing changes in species movement patterns due to areas devoid of vegetation, and ultimately impacting local populations.

Alternative 2 (Proposed Action)

Direct/Indirect Effects. Under alternative 2, fuels treatments would be designed and implemented to emphasize protection of existing sagebrush ecosystems. Fuels management programs would consider sage grouse habitat needs. These policies would be likely to reduce the acres of sagebrush burned in wildfires, or lost during fuels treatment programs. Therefore, these policies would provide additional protection to Bi-state sage grouse habitat in comparison to alternative 1. Applicable direction under alternative 2 includes the following:

Goal 1: Bi-state sage grouse priority habitat and movement corridors are managed to bring vegetation communities to their ecological site potential and to maintain or increase the species.

> **Objective 1a**: By 2024, 200,000 acres of degraded priority habitat has been improved through changes in management or restoration to meet habitat objectives.
>
> **Standard 1d**: Any vegetation treatment within Bi-state sage grouse habitat shall maintain, improve, or restore Bi-state sage grouse habitat.

Goal 3: In priority habitat, fuel treatments are as a management tool when the benefits to Bi-state sage grouse clearly outweigh the risks; otherwise fire is suppressed in priority habitat after life and property.

Objective 3a: By 2024, proactive fire prevention treatments will have been implemented in or adjacent to 30 percent of the identified priority habitat.

Objective 3b: By 2019, risk of unwanted fire in priority habitats shall be 20 percent lower compared to conditions in 2014.

Guideline 3a: Where possible do not use fire, including brush control, as a management tool in areas where there is threat of cheatgrass invasion, sagebrush areas with less than 12 inches of annual precipitation or 12 inches of soil, or areas where the sagebrush cover would be reduced to less than 15 percent.

Guideline 3b: Do not use fire as a management tool in areas where the risk of escaped fire could cause negative long-term impacts.

Guideline 3c: When wildfires occur, resource advisors shall immediately identify areas important to Bi-state sage grouse (such as leks) to fire personnel.

Guideline 3d: Priority for suppression of non-management wildfire in priority habitat should be immediately after life and property.

Compared to alternative 1, management direction under alternative 2 provides increased protection of Bi-state sage grouse habitats by decreasing risk of habitat loss due to fire.

Pinyon-Juniper Encroachment

Pinyon-juniper woodlands may encroach into sagebrush ecosystems, which reduce and eventually eliminate Bi-state sage grouse habitat in these areas and compromise landscape connectivity. Pinyon-juniper invasion reduces shrub cover, and the season of available succulent forbs is shortened due to soil moisture depletion (Crawford et al. 2004). In addition, trees provide perch sites for avian predators which account for a substantial portion of Bi-state sage grouse mortality causes (Casazza et al. 2007; Manier et al. 2013). The Forest Service and BLM implement pinyon-juniper treatments using a variety of methods to reduce conifer encroachment of sagebrush communities. Pinyon-juniper encroachment is identified as a high risk factor for most Bi-state sage grouse populations (table 13). Fire suppression policies can contribute to increased pinyon-juniper spread (USDI Fish and Wildlife Service 2013).

Alternative 1 (No-Action)

Direct/Indirect Effects. The no-action alternative does not take any specific actions to prevent pinyon-juniper encroachment, but does contain goals and objectives for maintaining improving, or restoring sagebrush plant communities, often for big game winter range and/or livestock grazing. These approaches do not specifically address the threat of encroachment to benefit sage grouse and thus would likely have limited effectiveness in controlling the invasion.

Alternative 1 under the Carson City District RMP prescribes removal of 600 acres of pinyon-juniper overstory on selected sites in the analysis area via fuelwood harvest. No prescriptions or direction was found in any land and resource management plans and resource management plans related to reducing pinyon-juniper encroachment to benefit sagebrush restoration.

As signatories to the Bi-state Action Plan (Bi-state Technical Advisory Committee 2012) the Humboldt-Toiyabe National Forest and BLM in Nevada have accomplished pinyon-juniper

reduction projects as well as committed to future reductions in pinyon-juniper encroachment to benefit sage grouse habitats under the no-action alternative.

Alternative 2 (Proposed Action)

Direct/Indirect Effects. Alternative 2 provides the following direction that would increase emphasis on reductions in pinyon-juniper encroachment to benefit sagebrush distribution in comparison to alternative 1:

Bi-state Sage Grouse Desired Habitat Conditions

General

- Bi-state sage grouse habitat is expanded beyond the current 1,133,000 acres present on NFS lands and BLM public lands, as of 2014.
- Sagebrush communities are large and intact.
- The native plant community is resilient, with the appropriate shrubs, grasses, and forbs, as identified in the ecological site description.
- There is no conifer encroachment within line of site of leks or nesting areas; there are less than 3 to 5 trees per acre in other areas.

Goal 1: Bi-state sage grouse priority habitat and movement corridors are managed to bring vegetation communities to their ecological site potential and to maintain or increase the species.

Objective 1a: By 2024, 200,000 acres of degraded priority habitat has been improved through changes in management or restoration to meet habitat objectives.

Standard 1a: Habitat restoration projects shall be designed to meet one or more of the following habitat needs:

- Promote the maintenance of large, intact sagebrush communities

Invasive Weeds

Invasive weeds alter plant community structure and composition, productivity, nutrient cycling, and hydrology and may cause declines in native plant populations, including sagebrush habitat, through competitive exclusion and niche displacement, among other mechanisms. Invasive plants reduce and, in cases where monocultures occur, eliminate vegetation that sage grouse use for food and cover. Invasive plant communities do not provide suitable Bi-state sage grouse habitat, since the species requires sagebrush, and a variety of native forbs and grasses, and very often the insects associated with them. Bi-state sage grouse depend on sagebrush, which is eaten year-round and used exclusively throughout the winter for cover. Along with competitively excluding vegetation essential to sage grouse, invasive plants fragment existing sage grouse habitat or reduce habitat quality. Invasive plants may also alter long-term changes in ecosystem processes, such as fire-cycles and other disturbance regimes that persist even after an invasive plant is removed (Connelly et al. 2004). The spread and establishment of invasive species is a notable risk factor throughout the Bi-state sage grouse population areas.

Alternative 1 (No-Action)

Direct/Indirect Effects. Under current management (no-action alternative), the Forest Service and BLM utilize integrated weed management techniques to reduce the likelihood of invasive weed spread and the extent of current infestations. This issue is intimately tied to the threat from fire, and fuels management actions which can also reduce weeds and create fire breaks. Under alternative 1, both the Forest and BLM would continue to implement noxious weed and invasive

species control using integrated weed management actions per funding and plans in cooperation with State and Federal agencies, affected counties, and adjoining private lands (though there are no specific objectives in Forest Plans to focus these efforts on cheatgrass or sagebrush communities). These actions would improve Bi-state sage grouse habitat along with other vegetation types, but would not specifically prioritize management of these areas.

Alternative 2 (Proposed Action)

Direct/Indirect Effects. Under alternative 2, the Humboldt-Toiyabe National Forest and BLM would continue to implement noxious weed and invasive species control using integrated weed management actions per existing plans to control, suppress, and eradicate noxious and invasive species, similar to direction provided under alternative 1. However, fire-related measures (see above) specified in alternative 2 would provide decreased risk of establishment of invasive plants, especially cheatgrass in comparison to alternative 1.

In addition to those described above related to fire, applicable management direction under alternative 2 consists of the following measures:

Bi-state Sage grouse Desired Habitat Conditions

General

- The native plant community is resilient, with the appropriate shrubs, grasses, and forbs, as identified in the ecological site description.

Goal 1: Bi-state sage grouse priority habitat and movement corridors are managed to bring vegetation communities to their ecological site potential and to maintain or increase the species.

Objective 1a: By 2024, 200,000 acres of degraded priority habitat has been improved through changes in management or restoration to meet habitat objectives.

Standard1b: When seeding, genetically and climatically appropriate and certified weed-free plant and seed material shall be used.

Minerals/Energy Development

Energy development can result in direct habitat loss and fragmentation of important habitats by roads, pipelines, powerlines, noise, and direct human disturbance. The effects of energy development often add to the impacts from other human development and may result in negative impacts to Bi-state sage grouse populations. Nonrenewable (oil and gas) energy development impacts sagebrush habitats through direct disturbance and habitat loss from well pads, access construction, seismic surveys, roads, powerlines, and pipeline corridors; and indirectly from noise, gaseous emissions, changes in water availability and quality, and human presence. The interaction and intensity of effects could cumulatively or individually lead to habitat fragmentation in the long term (Connelly et al. 2004; Holloran 2005). Evidence suggests that sage grouse avoid lek sites with anthropogenic noise, particularly intermittent noise (Blickley et al. 2012). Renewable energy facilities, including solar and wind power, typically require many of the same features for construction and operation as do nonrenewable energy resources. Therefore, impacts from direct habitat losses, habitat fragmentation primarily by roads, but also by powerlines, noise, and increased human presence would generally be similar to those for nonrenewable energy development (USDI Fish and Wildlife Service 2010).

Surface and subsurface mining for mineral resources (coal, uranium, copper, phosphate, and others) results in direct loss of habitat if they occur in sagebrush habitats. Surface mining usually has a greater impact than subsurface activity. Habitat loss from mining can be

exacerbated by the storage of overburden (soil removed from mine shafts) in undisturbed habitat. If infrastructure is necessary, additional direct loss of habitat could result from structures, staging areas, roads, railroad tracks, and powerlines. Bi-state sage grouse could be directly affected by trampling or vehicle collision and indirectly from an increase in human disturbance, ground shock, noise, dust, reduced air and water quality, and changes in vegetation and topography (Brown and Clayton 2004). Industrial activity associated with the development of surface mines and infrastructure could result in noise and human activity that disrupt the habitat and life-cycle of sage grouse. Under this alternative, a small percentage of Bi-state sage grouse habitat would be closed to non-energy leasable mineral leasing, with the majority or remainder of all designated habitats open to leasing (including expansion of new leases) with no cap on surface disturbing activities. As such, this alternative would be expected to cause the greatest amount of direct and indirect habitat loss, degradation, and fragmentation for Bi-state sage grouse. There would likely also be greater negative effects from noise, increased presence of roads/humans, and anthropogenic structures in an otherwise open landscape.

Alternative 1 (No-Action)

Direct and Indirect Effects. Management direction under alternative 1 provides some measures of protection from activity-related disturbance.

Under the Toiyabe LRMP, sage grouse protections are implemented on a project-by-project basis according to goals, desired future condition, and standards and guidelines described for sensitive species and their habitats (appendix A).

Under the Tonopah RMP, seasonal restrictions are prescribed to avoid disturbance (see below). In the Carson City District RMP, restrictions pertaining to oil and gas leasing and geothermal leasing are established in the spring and early summer for six sage grouse strutting grounds (leks). No management direction pertaining to mineral and energy development and sage grouse disturbance was found in the Toiyabe LRMP.

Tonopah (Battle Mountain District) RMP

Standard Operating Procedures

- Seasonal restrictions on activities which are included in this RMP to prevent disturbing of wildlife will apply to the following authorizations: fluid mineral leasing, nonenergy mineral leasing, mineral material sales, geophysical prospecting, right-of-way construction, off-highway vehicle events, construction of range improvements, activities authorized under the Recreation and Public Purposes Act (R&PP Act), and vegetation sales. In general, maintenance of rights-of-way, range improvement projects, and other facilities will not be restricted. Locatable mineral exploration and development activities will be encouraged to abide seasonal restrictions but cannot be required to do so.
- Activities in key fish and wildlife areas will, when necessary, be restricted during periods of breeding, nesting, spawning, lambing, or calving activity, and during major migrations of fish and wildlife.

Alternative 2 (Proposed Action)

Direct and Indirect Effects. Under alternative 2, minerals and energy development activities would be subject to standards that require mitigation of negative impacts to the extent practicable. This would include buffers, timing limitations, or off-site habitat restoration for all

new or renewed discretionary actions. In comparison to alternative 1, these measures would decrease risk to sage grouse due to management or permitted activity-related disturbances.

Infrastructure

Human developments, such as powerlines, communication towers, fences, roads, and railroads, contribute to habitat loss and fragmentation, with power lines and roads having the largest effects (Connelly et al. 2004; Naugle et al. 2011). Human disturbance is increased over the short term during infrastructure construction. In the long term, increased threats from predators perching on infrastructure may cause declines in sage grouse. Powerlines can directly affect sage grouse by posing a collision and electrocution hazard, increasing predation, reducing connectivity and facilitating the invasion of exotic plants (Braun 1998, pages 145–146; Connelly et al. 2004, pages 12, 25). Powerlines are linear and often extend for many miles. Thus, ground disturbance associated with powerline construction, as well as vehicle and human presence during maintenance activities, may introduce or spread invasive weeds over large areas, thereby degrading habitat. Cellular and other communications towers have the potential to cause sage grouse mortality via collisions, to influence movements through avoidance of a tall structure or electromagnetic radiation, or to provide perches for corvids (primarily ravens) and raptors (Connelly et al. 2004).

Wisdom et al. (2011) reported the mean distance to cellular towers in extirpated sage grouse range (13.7 miles) was almost twice that of occupied range (7 miles). Sage grouse have been observed to avoid brood-rearing habitats within 3 miles of powerlines (LeBeau 2012). Higher densities of powerlines within 4 miles of a lek negatively influence lek attendance (Walker et al. 2007). Additionally, the tendency of sage grouse to fly relatively low, and in low light or when harried, may put them at high risk of collision with powerlines (Manier et al. 2013, page 81). In addition, research suggests that road traffic within 4.7 miles of leks negatively influence male lek attendance (Connelly et al. 2004). Lek count trends have been found to be lower near interstate, Federal, or state highways compared to secondary roads. Impacts from roads may include direct habitat loss from road construction and direct mortality from collisions with vehicles. Roads may also present barriers to migration corridors or seasonal habitats. Other impacts include facilitation of predator movements, spread of invasive plants, and human disturbance from noise and traffic (Forman and Alexander 1998). Closing and reclaiming unused, minimally used, and/or unnecessary roads in and around sagebrush habitats during seasonal use by sage grouse may reduce habitat loss (NTT 2011).

Railroads presumably have the same potential impacts to GRSG as do roads because they create linear corridors within sagebrush habitats, promoting habitat fragmentation and other disturbance. In addition, fence poles create predator perch sites and potentially predator corridors along fences (particularly if a road is adjacent). Fences and their associated roads may allow for the invasion or spread of invasive weeds along the fencing corridor. Furthermore, fences may effectively cause habitat fragmentation, as sage grouse may avoid habitat around the fences to escape predation (Braun 1998).

Alternative 1 (No-Action)

Direct and Indirect Effects. Alternative 1 provides some limitations on infrastructure use and construction under all Humboldt-Toiyabe National Forest and BLM land management plans pertinent to this analysis. The Toiyabe LRMP direction provides for seasonal or year-round restriction of ORV use in order to limit or avoid impacts to key wildlife habitats. It also prescribes that roads, trails, and "areas" will be designated in the Ranger District travel plans and maps for motorized vehicle use, thereby preventing general cross-country ORV (off-road vehicle) use. Under the Carson City RMP, vehicles are restricted to designated roads and trails

in the upper elevations of the Pine Nut Range. In addition, all existing roads and trails will be designated open to OHV use except where roads or trails impact sensitive meadows, seeps, springs and other waters as identified in the watershed decisions. Vehicles are excluded from any riparian area associated with meadows, marshes, springs, seeps, ponds, lakes, reservoirs or streams.

Alternative 2 (Proposed Action)

Direct and Indirect Effects. Under alternative 2, several measures would incorporate limits to infrastructure development to benefit sage grouse, including roads, structures, powerlines, and fences:

Goal 2: Bi-state sage grouse and their priority habitats will benefit from standards and guidelines adopted to eliminate or reduce negative impacts and increase positive impacts from discretionary and non-discretionary actions.

> **Objective 2a**: By 2020, Bi-state sage grouse productivity, survival, or use of seasonal habitats will be at least at the same level as 2014.
>
> **Standard 2b**: Buffers, timing limitations, or offsite habitat restoration shall be applied to all new or renewed discretionary actions in Bi-state-sage grouse habitat to mitigate potential long-term negative impacts.
>
> **Standard 2c**: When long-term negative impacts from non-discretionary actions are unavoidable, mitigations shall be assigned to result in no net loss of habitat.
>
> **Standard 2d**: No structures or powerlines taller than the surrounding vegetation that could serve as predator perches shall be installed within 3 kilometers (about 1.9 miles) of a lek.
>
> **Standard 2e**: No structures greater than 8-feet tall that could serve as predator perches shall be installed within Bi-state sage grouse habitat unless they are equipped with anti-perching devices.
>
> **Standard 2j**: Visible markers shall be installed on fences and other barriers, especially if the fence or other barrier is on flat topography, has spans exceeding 12 feet between T-posts, has no wooden or equally visible posts or supports, or where fence or barrier densities exceed 1.6 miles of fence per 80 by 80 acre section (640 acres).
>
> **Standard 2n**: When informed that a right-of-way is no longer in use, relinquish the right-of-way and reclaim the site by removing powerlines, reclaiming roads, and removing other infrastructure.
>
> **Guideline 2a**: To the extent possible, do not install fences in Bi-state sage grouse habitat unless to protect habitat or for human health and safety. If fences must be installed, they shall be at least 3 kilometers (about 1.9 miles) from active leks, and if possible, let-down when not needed for the purpose of their installation.
>
> **Guideline 2b**: Use existing roads and co-locate powerlines whenever possible to reduce disturbance footprints and habitat fragmentation.
>
> **Guideline 2c**: Where feasible, bury powerlines to reduce overhead perches.

In comparison to alternative 1, alternative 2 limits the effects of infrastructure construction and reduces the risks posed by roads transmission lines and fences, such as increased predation, collision, and fragmentation of habitat.

Livestock Grazing and Feral Horses

Livestock grazing may have both beneficial and detrimental aspects relative to sagebrush habitats, depending on site-specific management. Grazing can be used as a tool to reduce fuel load as well as reduce spread of invasive plants and woody plant encroachment (USDI Fish and Wildlife Service 2010). However, grazing at inappropriate intensity, season, or location may degrade sagebrush ecosystems over the long term, including changes in plant communities and soils, leading to loss of vegetative cover and plant litter, increased erosion, decreased water quality, and reduced overall habitat quality for wildlife including GRSG (Connelly et al. 2004).

Grazing exerts repeated pressure over time on an area and can have substantial long-term impacts depending on site-specific management (i.e., yearly hot season grazing, high utilization levels, inappropriate use of springs/wet meadows). Overuse of areas can result in a loss of perennial bunchgrasses (understory vegetation) and an increase in shrubs and bare ground. Grazing can thus influence nest site selection and nest success through loss of grass cover. Additionally, livestock often concentrate at springs/wet meadows and this can affect late brood-rearing habitat (Crawford et al. 2004; Beck and Mitchell 2000; Connelly and Braun 1997). The reduction of grass heights from grazing could reduce the suitability of cover and habitat availability by increasing exposure to predators. Livestock may also occasionally trample nests/eggs (Coates 2007; pages 28, 33), or disturb reproduction efforts in other ways. At the planning scale, Forest Service and BLM can decide whether areas would be open or closed to livestock grazing. Future impacts would be eliminated in areas closed to grazing, but past impacts would likely persist, and closing grazing may result in other impacts, such as fuel buildup. At the implementation level, both agencies can consider changes in grazing practices or systems, which could reduce grazing intensity or change the season of use, for example. In addition, changes in grazing management within riparian and wet meadows can reduce impacts in these important seasonal habitats.

Approximately 40,000 free-roaming horses and burros currently live in the western U.S. and are found in approximately 18 percent of occupied sage grouse range (Connelly et al. 2004) and primarily on BLM administered lands. A horse consumes 20 to 65 percent more forage than would a cow of equivalent size, and horses can use higher elevation areas and steeper slopes so a wider swath of sagebrush is grazed when horses are present (Connelly et al. 2004).

Alternative 1 (No-Action)

Direct and Indirect Effects. Under alternative 1, the Forest Service would continue to make sage grouse habitat available for livestock grazing and wild horse management. Active AUMs for permitted livestock grazing remain at existing levels, though the number of AUMs on a permit may be adjusted during permit renewals, allotment management plan development, or other appropriate administrative activity. Wild horse and burro AUMs would also remain at current levels. These policies may contribute to sage grouse habitat degradation if current grazing practices are not meeting Forest Plan proper use parameters or if horse and burro numbers exceed carrying capacity. Under this alternative, there would be no change in the numbers, timing, or method of livestock grazing on the Forest. In addition, there would be no change to wild horse or burro management. Other potential effects to sage grouse habitat could include: reduction in cover, structure, and loss of diversity due to consumption, and degradation of meadow/wetland/spring/stream habitat crucial for reproduction.

Alternative 2 (Proposed Action)

Direct/Indirect Effects. Alternative 2 would not reduce acres open to livestock or feral horse grazing, nor direct a reduction in AUMs. However, within Bi-state sage grouse habitat the project would incorporate sage grouse habitat objectives and management considerations into

grazing allotments through AMPs or permit renewals administratively. The effects due to livestock grazing, vegetation disturbance, and range improvements is expected to be similar under to alternative 1, except that it would provide additional restrictions to protect Bi-state sage grouse habitat. This direction would have a positive effect on Bi-state sage grouse habitat, likely creating improved conditions for productive breeding, nesting, and brood rearing where these areas are currently impacted. Measures provided under alternative 2 consist of the following:

Goal 2: Bi-state sage grouse and their priority habitats will benefit from standards and guidelines adopted to eliminate or reduce negative impacts and increase positive impacts from discretionary and non-discretionary actions.

> **Objective 2a**: By 2020, Bi-state sage grouse productivity, survival, or use of seasonal habitats will be at least at the same level as in 2014.
>
> **Standard 2h**: Livestock watering and handling facilities (corrals, chutes, dipping vats, etc.) salting or supplemental feeding stations or sheep bedding grounds shall not be located within 1 kilometer of a lek or riparian areas.
>
> **Standard 2i**: Grazing permits, AOIs (annual operating instructions), or other appropriate mechanism for livestock management shall include terms, conditions, and direction to move toward or maintain Bi-state sage grouse habitat desired conditions.

Isolation/Habitat Fragmentation

Loss of habitat connectivity within and between the Pine Nut, Desert Creek-Fales, Bodie Hills, and Mount Grant Population Management Units is identified as a concern for long-term conservation. The major factor contributing to loss of connectivity for all population management units is pinyon-juniper encroachment, with recent wildfires and urbanization also identified as contributing factors for the Pine Nut Population Management Unit (Bi-state Technical Advisory Committee 2012).

Alternative 1 (No-Action)

Direct and Indirect Effects. Pinyon-juniper encroachment and wildfire risk factors are discussed above. Both prescribed fire and non-fire fuels treatments are allowed in current LRMP and RMPs, and fire suppression is prioritized to protect human life and specific resource values at risk. Some emphasis is placed on protection of sage grouse habitats. The Carson City District RMP prescribes removal of 600 acres of pinyon-juniper overstory on selected sites in the analysis area via fuelwood harvest. No prescriptions or direction was found in any LRMP or RMP related to reducing pinyon-juniper encroachment to benefit sagebrush restoration.

Neither the existing LRMP nor RMPs contain direction that encourages consolidation of sage grouse habitats to improve connectivity.

Alternative 2 (Proposed Action)

Direct/Indirect Effects. Alternative 2 provides additional direction that would increase emphasis on reductions in pinyon-juniper encroachment to benefit sagebrush distribution in comparison to alternative 1 (see above). Fuels treatments would be designed and implemented to emphasize protection of existing sagebrush ecosystems. Fuels management programs would consider sage grouse habitat needs. These policies would be likely to reduce the acres of sagebrush burned in wildfires, or lost during fuels treatment programs.

Alternative 2 would also encourage consolidation of sage grouse habitat, facilitating habitat conservation. The alternative contains the following goals, objectives, standards and guidelines specific to maintaining or restoring habitat connectivity:

Bi-state Sage Grouse Desired Habitat Conditions

General

- Bi-state sage grouse habitat is expanded beyond the current 1,133,000 acres present on national forest system lands and BLM public lands, as of 2014.
- Sagebrush communities are large and intact.

Goal 1: Bi-state sage grouse priority habitat and movement corridors are managed to bring vegetation communities to their ecological site potential and to maintain or increase the species.

Objective 1a: By 2024, 200,000 acres of degraded priority habitat has been improved through changes in management or restoration to meet habitat objectives.

Standard 1a: Habitat restoration projects shall be designed to meet one or more of the following habitat needs:

- Promote the maintenance of large, intact sagebrush communities;
- Limit the expansion or dominance of invasive species, including cheatgrass;
- Maintain or improve soil site stability, hydrologic function, and biological integrity; and
- Enhance the native plant community.

Standard 1d: Any vegetation treatment within Bi-state sage grouse habitat shall maintain, improve, or restore Bi-state sage grouse habitat.

Standard 2l: Federal lands in Bi-state sage grouse habitat shall be retained unless a public interested determination identifies a net benefit to Bi-state sage grouse habitat.

Standard 2n: When informed that a right-of-way is no longer in use, relinquish the right-of-way and reclaim the site by removing powerlines, reclaiming roads, and removing other infrastructure.

Standard 2m: The Forest Land Acquisition Plan shall include all private parcels that include Bi-state sage grouse habitat within the NFS boundaries.

Guideline 2b: Use existing roads and co-locate powerlines whenever possible to reduce disturbance footprints and habitat fragmentation.

Goal 3: In priority habitat, fuel treatments are as a management tool when the benefits to Bi-state sage grouse clearly outweigh the risks; otherwise fire is suppressed in priority habitat after life and property.

Objective 3a: By 2024, proactive fire prevention treatments will have been implemented in or adjacent to 30 percent of the identified priority habitat.

Objective 3b: By 2019, risk of unwanted fire in priority habitats shall be 20 percent lower compared to conditions in 2014.

Guideline 3a: Where possible do not use fire, including brush control, as a management tool in areas where there is threat of cheatgrass invasion, sagebrush areas with less than 12 inches of annual precipitation or 12 inches of soil, or areas where the sagebrush cover would be reduced to less than 15 percent.

Guideline 3b: Do not use fire as a management tool in areas where the risk of escaped fire could cause negative long-term impacts.

Guideline 3c: When wildfires occur, resource advisors shall immediately identify areas important to Bi-state sage grouse (such as leks) to fire personnel.

Guideline 3d: Priority for suppression of non-management wildfire in priority habitat should be immediately after life and property.

These conservation measures would be more protective than measures in alternative 1, by providing additional protection and prescribed restoration measures in Bi-state sage grouse habitats.

Disease (West Nile Virus)

Alternative 1 (No-Action)

Direct and Indirect Effects. No provisions pertaining to reduction of sage grouse disease potential are found in alternative 1.

Alternative 2 (Proposed Action)

Direct/Indirect Effects. Alternative 2 provides one measure in an effort to reduce the potential for spread of West Nile Virus:

Standard 2f: Water developments (tanks/troughs) shall be drained when not in use so they do not create a breeding ground for mosquitos that carry West Nile Virus.

Cumulative Effects

There could be cumulative effects in addition to impacts described above. Sagebrush habitat also occurs on private, state, and BLM land adjacent Forest Service and BLM lands. There are some existing conservation measures on these other lands. Cumulatively, however, there could be additional loss, degradation, or disturbance from recreation and travel, rights-of-way granted, energy and mineral development, range management, and fire and fuels management in sagebrush habitat. Ongoing activities including Forest Service and BLM land management planning are likely to incorporate management direction that provides some level of protection and improvement of Bi-state sage grouse habitats. Past travel management plans on the Humboldt-Toiyabe National Forest have prescribed reductions in open road densities in addition to other travel restrictions that likely benefit sage grouse. Ongoing geothermal leasing on Humboldt-Toiyabe National Forest lands may have some measure of added effect, but cumulatively this is likely to be minor at the project area scale.

Summary of Effects and Determination

Management direction provided under alternative 2 increases protection of Bi-state sage grouse habitats and consequently decreases risk to Bi-state sage grouse individuals and population. Effects to sage grouse and their habitats due to alternative 2 would be generally beneficial due to reducing anthropogenic influences to sagebrush habitats known and identified as such. Under current circumstances, alternative 1 does not provide the regulatory mechanisms or assurances to protect, conserve, or enhance GRSG habitats to the extent desired. There would be beneficial effects to Bi-state sage grouse as a result of implementing alternative 2. Therefore, the Greater Sage-grouse Bi-state Distinct Population Segment Forest Plan Amendment project **may affect individuals, but is not likely to contribute to the need for Federal listing or result in loss of viability for the greater sage-grouse (Bi-state DPS) in the planning area.**

Affected Environment and Environmental Consequences – Sagebrush Associated Species

Pygmy rabbit, dark kangaroo mouse, desert bighorn sheep, ferruginous hawk, and loggerhead shrike are sagebrush-dependent or associated species that are grouped together for this analysis. Though each of the species may not be completely dependent upon sagebrush for every life history stage, for the sake of this analysis, and based on the potential effects, programmatic nature of the conservation measures and landscape scale which is being analyzed, we grouped them into this category and call them *sagebrush associated species*. In addition, as the nature of the project is to amend Forest Plans to include regulatory mechanisms and conservation measures to protect sagebrush habitats for Bi-state sage grouse, the effects would generally be similar for these species where habitat overlaps.

Pygmy Rabbit. Pygmy rabbit occurrence within the project area is questionable. Mapping of known populations by Larrucea and Brussard (2008) as well as California Natural Diversity Database wildlife observation records show a population in the Mono Lake area where the nearest observation is about 5.5 miles from the analysis area. They are still addressed here because the status of survey effort for pygmy rabbits within the analysis area is unknown.

Dark Kangaroo Mouse. Known distribution includes Upper Sonoran Desert portions of Oregon, Utah, California, and Nevada. Database records show several records in Mineral County within the analysis area. Actual species distribution within the project area is not known.

Desert Bighorn Sheep. The range of several desert bighorn herds overlaps the Bi-state sage grouse project area, but the East Walker River herd is the only group to overlap the analysis area. Sporadic presence of individual stray domestic sheep in the East Walker River has created a high risk of pathogen transmission between domestic sheep and bighorn (Nevada Division of Wildlife 2013).

Golden Eagle. There have been a number of golden eagle observations throughout the project area.

Western Burrowing Owl. Several burrowing owl observations are located within the Bi-state sage grouse project area, but none overlap with the analysis area.

Ferruginous Hawk. Several observations are reported for the northern portion of the project area, with one observation located in the southern portion. No observations coincide with the assessment area. Floyd et al. (2007) show no breeding sites in the vicinity of the California-Nevada border.

Sage Thrasher. Distribution in Nevada is state-wide where suitable habitats occur. Floyd et al. (2007) show one confirmed location likely to be within the project area.

Brewers' Sparrow. Distribution in Nevada is state-wide outside of Mojave Desert habitats. Floyd et al. (2007) show several confirmed locations likely to be within the project area.

Loggerhead Shrike. Although suitable habitats are available, wildlife databases show only one record for the project area and analysis area, occurring along the border of Mineral and Esmeralda counties.

Environmental Consequences

Alternative 1 (No-Action)

Direct/Indirect Effects. Effects of alternative 1 on sagebrush-associated species are similar to those described for the Bi-state sage grouse. Alternative 1 would maintain current land management direction, with some direction provided to manage habitat for sagebrush-associated species. This alternative has the highest potential to impact sagebrush-associated species due to the lower level of restrictions on activities that cause negative impacts.

Cumulative Effects. There could be cumulative effects in addition to impacts described above. Sagebrush habitat also occurs on private, state, Native American, and other Federal lands within the project area. There are some existing conservation measures on these other lands. Cumulatively, however, there could be additional loss, degradation, or disturbance from recreation and travel, rights-of-way granted, energy and mineral development, range management, and fire and fuels management in sagebrush habitat.

Alternative 2 (Proposed Action)

Direct/Indirect Effects. Effects of alternative 2 on sagebrush-associated species are similar to those described for the Bi-state sage grouse.

Alternative 2 would encourage consolidation of sagebrush habitat via desired habitat conditions, habitat objectives, and standards and guidelines described above for Bi-state sage grouse. These conservation measures would be more protective than measures in alternative 1, by providing additional protection and prescribed restoration measures in sagebrush habitats. Under alternative 2, fuels treatments would be designed and implemented to emphasize protection of existing sagebrush ecosystems. Fuels management programs would consider sagebrush-associated species habitat needs. These policies would be likely to reduce the acres of sagebrush burned in wildfires, or lost during fuels treatment programs. Therefore, these policies would provide additional protection to Bi-state sage grouse habitat in comparison to alternative 1.

Under alternative 2, the Humboldt-Toiyabe National Forest and BLM would continue to implement noxious weed and invasive species control using integrated weed management actions per existing plans to control, suppress, and eradicate noxious and invasive species, similar to direction provided under alternative 1. However, fire-related measures specified in alternative 2 would provide decreased risk of establishment of invasive plants, especially cheatgrass, in comparison to alternative 1. Alternative 2 also provides additional direction that would increase emphasis on reductions in pinyon-juniper encroachment to benefit sagebrush distribution in comparison to alternative 1.

Alternative 2 would not reduce acres open to livestock or feral horse grazing, nor direct a reduction in AUMs, but within Bi-state sage grouse habitat, the project would incorporate sage grouse habitat objectives and management considerations into grazing allotments through allotment management plans or permit renewals administratively. The effects due to livestock grazing, vegetation disturbance, and range improvements are expected to be similar to alternative 1, except that it would provide additional restrictions to protect sagebrush habitat. Not only would that reduce disturbance, but it would provide a very minor positive effect on sagebrush habitats, likely creating small pockets of improved areas for foraging and breeding.

For the ferruginous hawk, reductions in pinyon-juniper prescribed in this alternative have the potential to impact availability of nest trees locally. However, management recommendations

provided for pinyon jay would prioritize retention of mature and old pinyon-juniper, thereby retaining nest trees most likely to support ferruginous hawks.

Cumulative Effects. There could be cumulative effects in addition to impacts described above. Sagebrush habitat also occurs on private, state, and BLM land adjacent Forest Service and BLM lands. There are some existing conservation measures on these other lands. Cumulatively, however, there could be additional loss, degradation, or disturbance from recreation and travel, rights-of-way granted, energy and mineral development, range management, and fire and fuels management in sagebrush habitat. Ongoing activities including Forest Service and BLM land management planning are likely to incorporate management direction that provides some level of protection and improvement of Bi-state sage grouse habitats. Past travel management plans on the Humboldt-Toiyabe National Forest have prescribed reductions in open road densities in addition to other travel restrictions that likely benefit sage grouse. Ongoing geothermal leasing on Humboldt-Toiyabe National Forest lands may have some measure of added effect, but cumulatively this is likely to be minor at the project area scale.

Summary of Effects

Management direction provided under alternative 2 increases protection of sagebrush habitats and consequently decreases risk to sagebrush-associated species. Effects to these species and their habitats due to alternative 2 would be generally beneficial due to reducing anthropogenic influences to sagebrush habitats known and identified as such. Under no action, incremental small-scale negative effects to sagebrush-associated species are more likely. Conversely, there would likely be beneficial impacts to these species as a result of implementing alternative 2.

Effects to Range Improvements and Domestic Livestock Grazing

Introduction

Domestic livestock grazing is a widespread use of the Forest Service and BLM administered public lands within the project area. This report will address the current grazing management within Bi-state sage grouse habitat and the effect of the proposed action as it relates to grazing management.

Overview of Issues Addressed

The proposed action could result in changes to range improvements, grazing seasons, and livestock management practices. Due to the scope of this plan amendment, its resulting effects are unable to be quantified and will be addressed in general terms.

Affected Environment

Existing Condition

Domestic livestock grazing is currently authorized on approximately 87 percent of Forest Service and BLM administered public lands within the project area. An additional 6 percent of the project area is included in vacant or closed grazing allotments.

There are 136 grazing allotments within the amendment area encompassing 3,979,611 acres. Information was unavailable nine BLM Battle Mountain District allotments; those allotments were excluded from the information below. Allotments within the amendment area are currently permitted for 110,938 AUMs. Sixty-six allotments are grazed by cattle, 33 are grazed by sheep, 2 are permitted for both cattle and domestic horses, and 1 allotment is permitted for both cattle

and sheep. There are 34 additional allotments within the project area that are either closed or vacant for various reasons. About one-half of the allotments are permitted for spring and/or summer use and the other half are permitted for fall and/or winter use. Bi-state sage grouse habitat is found in 87 allotments and totals 602,709 acres. Table 14 summarizes the livestock grazing information within the amendment area.

Table 14. Livestock grazing information

Forest Service Ranger District or BLM District	Number of Allotments in the Project Area	Acres of Allotments in the Project Area	Permitted AUMs in the Project Area	Number of Allotments in Sage Grouse Habitat	Acres of Sage Grouse Habitat in Allotments
Bridgeport Ranger District	57	829,932	36,250	50	358,278
Carson Ranger District	19	114,764	7,000	10	39,833
Battle Mountain District[1]	5	1,684,439	16,003	5	55,215
Carson City District	55	1,520,408	51,685	22	149,383
Total	136	3,979,611	110,938	87	602,709

[1] There are an additional 9 allotments within the amendment area that are not shown here because information was unavailable.

The Humboldt-Toiyabe National Forest manages 76 grazing allotments within the project area. These allotments encompass 1,051,985 acres and are currently permitted for 43,250 AUMs. Bi-state sage grouse habitat is found in 60, or about 79 percent, of these grazing allotments totaling 398,111 acres. The 60 allotments containing sage grouse habitat are permitted for 39,069 AUMs or about 90 percent of the Forest Service permitted AUMs within the project area.

The BLM manages 60 grazing allotments within the project area. These allotments encompass 2,927,626 acres and are permitted for 67,688 AUMs. Bi-state sage grouse habitat is found in 27, or about 39 percent, of these grazing allotments. The 27 allotments contain 204,598 acres of sage grouse habitat and account for 44,047 AUMs, or 53 percent, of the BLM permitted AUMs in the project area.

The critical disturbance period for sage grouse is typically March 1 to June 30. Of the 87 grazing allotments containing sage grouse habitat, 60 have permitted seasons of use that overlap with the critical disturbance period. There are seven allotments where the full season of use falls between March 1 and June 30.

The primary management objectives for livestock grazing have been to improve rangeland health, improve riparian functioning condition, and restore native plant communities. These objectives are accomplished through the strategic placement of range improvements (fences and water) and salt, use of rest-rotation and deferred rotation grazing systems, and herding. Annual adjustments are made according to forage availability and the prevalence of drought conditions or above-average precipitation.

Range improvements (fences and water developments) are found throughout the project area and help distribute livestock across the grazing allotments. Fences are typically three- to four-strand barbed wire, although there are other types of fences. Water developments include reservoirs, developed springs, and wells. Developed springs and wells commonly include pipeline systems that distribute water to one or more metal, fiberglass, or rubber-tire troughs or tanks. Reservoirs and developed springs are typically located in drainages and depressions, while wells and their

associated delivery tanks are typically located on uplands. The following table summarizes the number of range improvements in the project area and Bi-state sage grouse habitat.

In addition, the BLM must meet or ensure progress is being made toward meeting the BLM standards and guidelines for livestock grazing administration for each allotment. Four fundamentals of rangeland health are listed in Title 43 CFR 4180.1. They combine the basic precepts of physical function and biological health with elements of law relating to water quality and plant and animal populations and communities. The fundamentals provide the basis for the development and implementation of the standards for land health.

Standards and guidelines establish conditions needed to sustain public land health for soils, riparian systems, upland vegetation, wildlife habitat, threatened and endangered species, and water quality. Guidelines are livestock grazing management tools, methods, strategies, and techniques designed to maintain or achieve healthy public lands as defined by the standards. The standards and guidelines have been implemented through land health assessments, determination documents, environmental assessments, permit renewals and other permit changes. These standards not only pertain to impacts associated with livestock grazing, but also to other rangeland impacts from such activities as recreation, development activities, wildlife grazing, and wild horse management. Sustainable livestock grazing and desired rangeland condition requires the collective management of forage, water, soil, and livestock by the BLM and the livestock owners and operators.

Table 15. Range improvements in the project area within sage grouse habitat

Forest Service Ranger District or BLM District	Miles of Fence in the Project Area	Miles of Fence within Sage Grouse Habitat	Number of Sections with Fence Densities >1.6 Miles per Section	Number of Watering Facilities in the Project Area	Number of Watering Facilities within Sage Grouse Habitat	Number of Watering Facilities within 1 Kilometer of a Lek or Riparian Area	Number of Handling Facilities in the Project Area	Number of Handling Facilities within Sage Grouse Habitat	Number of Handling Facilities within 1 kilometer of a Lek or Riparian Area
Bridgeport Ranger District	233	173	22	133	91	22	15	7	5
Carson Ranger District	66	26	6	11	11	1	4	0	0
Battle Mountain District	95	6	0	12	2	0	5	0	0
Carson City District	180	18	1	4	0	2	1	0	0
Total	**574**	**223**	**29**	**160**	**104**	**25**	**25**	**7**	**5**

Environmental Consequences

Methodology

The analysis is largely based on GIS layers and information from BLM and Forest Service documents.

Incomplete and Unavailable Information

Due to the size of the project area, site-specific information was not used. Information on nine grazing allotments was unavailable.

Past, Present, and Foreseeable Activities Relevant to Cumulative Effects Analysis

Domestic livestock grazing has occurred in the project area since the mid-1800s. The BLM and Forest Service have updated the terms and conditions of grazing permits in order to improve rangeland health, improve riparian functioning condition, and restore native plant communities and will continue to do so in the future. Allotments that are currently vacant could be closed or re-authorized for livestock grazing in the future.

Alternative 1 – No Action

Direct/Indirect Effects. Selecting the no-action alternative will not change the current grazing management in the project area. Grazing management will continue as directed under the current Forest Plan and RMPs. Domestic livestock grazing would continue under the terms and conditions of the current grazing permits until updated by allotment level NEPA analyses.

Alternative 2 – Proposed Action

Direct/Indirect Effects. Standards 2a and 2b of the proposed action require mitigating long-term negative impacts and could apply buffers and/or timing limitations to livestock grazing. While dispersed grazing has a short-term or neutral effect to sage grouse habitat, activities and facilities that concentrate livestock use in an area (watering sources, salting areas, and sheep bedding grounds) could have an impact on Bi-state sage grouse or its habitat (and thus be affected by the proposed amendment). The proposed standards could result in changing seasons of livestock use or closing areas to grazing to avoid disturbance during critical periods. Closing areas to grazing would result in a loss of permitted AUMs; however, any potential AUM losses would need to be determined on an allotment-specific basis. Mitigation measures that may be required per standard 2a because of long-term impacts would need to be evaluated on a case-by-case basis. The ability of grazing permittees to distribute livestock with strategically placed salt and water to meet other Forest Plan and RMP requirements could be limited by these standards.

Standards 2f and 2g of the proposed action will affect management of water troughs and tanks. They require installation of escape ramps and draining when not in use. The Forest Service, BLM, and grazing permittees are currently in the process of installing escape ramps in watering facilities. Although these standards would have no impact on grazing management, standard 2f would place an additional workload on the grazing permittees by requiring them to make an additional trip to each watering facility to drain it at the end of each period of use.

Standard 2h prohibits locating livestock watering and handling facilities, salt and supplemental feed stations, and sheep bedding grounds within 1 kilometer of a lek or a riparian area. Salting areas, supplemental feeding stations, and sheep-bedding grounds are not currently mapped in the project area; however, grazing permittees are currently instructed to locate them outside of

riparian areas. There are 25 watering facilities (troughs and tanks) and 5 handling facilities (corrals) within 1 kilometer of leks and riparian areas. Due to topography, location of fences, and other factors, the relocation of watering facilities may not be feasible. Each facility would need to be addressed on an individual basis to determine if it could be relocated. Removing or relocating these facilities could have an impact on the ability of permittees to distribute their livestock throughout an allotment. If watering facilities are removed, the lack of water could effectively close an allotment or portions of it, or increase livestock use in riparian areas.

Standard 2i requires grazing permits and annual operating instructions to include terms, conditions, and direction to move toward or maintain Bi-state sage grouse habitat desired conditions. The current condition of sage grouse habitat within grazing allotments would need to be evaluated to determine what additional terms, conditions, and direction are needed to move toward or maintain Bi-state sage grouse desired habitat conditions. Several changes could be made to grazing permits and annual operating instructions to meet this standard: utilization levels could be lowered, seasons of use and numbers of permitted livestock could change, and certain areas or whole allotments could be closed to grazing.

Standard 2j addresses marking fences that have spans exceeding 12 feet between T-posts, lack wooden or other visible supports, and where fence densities exceed 1.6 miles per section. There are 29 sections where fence densities exceed 1.6 miles per section. These sections contain a total of 61 miles of fence. It is unknown how many miles of fence meet the other criteria for marking. Installing fence markers would have no impact on grazing management, although it would be an additional workload for the permittees.

Cumulative Effects

The Forest Service and BLM will continue to analyze livestock grazing allotments under project-level NEPA decisions. Future decisions could involve re-authorizing grazing use on allotments, changing terms and conditions of grazing permits, and closing allotments.

Summary of Effects

Implementation of the proposed action could result in changes to the permitted seasons of livestock use, closing areas to grazing, and relocating or removing livestock watering and handling facilities. The magnitude of these effects on current livestock management and any potential losses of permitted AUMs are unable to be predicted without site-specific assessments.

Effects to Weeds

Noxious weeds and other invasive plants out-compete native vegetation for resources through advantageous physiological characteristics. Weeds threaten to degrade public lands in Nevada and California by spreading into and infesting sensitive riparian ecosystems, important rangelands, wildfire scars, and developed lands maintained as rights-of-way or recreational areas. These threats can come in the form of unbalanced biodiversity, a weakened ecosystem, a higher propensity for soil erosion, increased frequency of wildfires, and limited food resources for both terrestrial and aquatic wildlife. Weeds on private agricultural lands have the potential to spread onto Federal lands and vice versa.

There are numerous noxious and invasive weed infestations of varying sizes and weed densities within the project area and Bi-state sage grouse habitat. The total acreage of all known noxious weeds infestations within the project area is approximately 1,500 acres. Current surveying and

mapping of noxious weeds is ongoing within the project area. There are currently 700 acres of noxious weed infestations within Bi-state sage grouse habitat.

The BLM and Forest Service utilize an integrated pest management approach to prevent the introduction and establishment of noxious weeds and to control existing infestations. This includes education and preventative measures, as well as physical, biological, chemical, and cultural treatments.

Environmental Consequences

Alternative 1 – No Action

Direct/Indirect Effects. Under the no-action alternative, management of noxious weeds would continue under current management.

Alternative 2 – Proposed Action

Implementation of the proposed action would have a mostly beneficial effect on noxious and invasive weed control efforts by limiting disturbance caused by prescribed fire and brush control treatments and reducing the likelihood of spreading noxious weed species. The restriction on pesticide use during the critical disturbance period could hinder efforts to control some species, but there are other management options available that could minimize the effect.

Effects to Wild Horses and Burros

Introduction

BLM herd management areas and Forest Service wild horse and burro territories make up about 25 percent of the project area. Wild, free-roaming horses and burros are currently managed to ensure the health of the public lands so that the species depending on them, including the Nation's wild horses and burros, can thrive.

Affected Environment

Existing Condition

Following passage of the Wild Free-Roaming Horses and Burros Act of 1971 (PL 92-195, as amended by Congress in 1976, 1978, 1996, and 2004; the Act), BLM herd areas (HAs) and herd management areas (HMAs) and Forest Service wild horse and burro territories (WHBTs) were identified. HAs and territories are locations where wild horse and burro populations were found when the Act was passed. HMAs and WHBTs are areas within these identified herd areas, in their entirety or part, where it was established and affirmed through land use plans that sufficient forage, water, cover, and space existed to support the long-term management of healthy wild horse or burro populations.

The BLM program emphasis is beyond just establishing an appropriate management level (AML) and conducting wild horse gathers to include a variety of management actions that further facilitate the achievement and maintenance of viable and stable wild horse populations and a "thriving natural ecological balance." Management actions resulting from shifting program emphasis include increasing fertility control, adjusting sex ratio, and collecting genetic baseline data to support genetic health assessments. The Forest Service has been a cooperating agency to these additional management efforts.

Wild horses are a long-lived species with survival rates estimated between 80 and 97 percent and may be the determinant of wild horse population increases (Wolfe 1980; Eberhardt et al. 1982; Garrott and Taylor 1990). Wild horse numbers appear to be limited principally by water availability and winter forage. Predation and disease have not substantially regulated wild horse population levels within or outside the planning area. Throughout the HMAs there are few predators to control wild horse populations. Some mountain lion predation occurs, but does not appear to be substantial. Coyotes are not prone to prey on wild horses unless they are young or extremely weak. Being a non-self-regulating species, there would be a steady increase in wild horse numbers for the foreseeable future, which would continue to exceed the carrying capacity of the range. Animal movement and distribution are controlled by fencing and the distribution of watering sources.

There are 1,422,716 acres of wild horse and burro herd areas, HMAs, and WHBTs within the project area. There are 12 herd areas and territories within the project area. These areas overlap 162,000 acres of habitat. These identified herd areas were the basis for current identified HMAs as established through land use plans.

The BLM manages 10 HMAs and the Forest Service manages 2 WHBTs in the project area. Five HMAs and one WHBT overlap sage grouse habitat. Wild horse and burro populations in HMAs and WHBTs are managed within appropriate management levels and corresponding forage allocations (AUMs). The appropriate management level is defined as the maximum number of wild horses that can be sustained within a designated HMA or WHBT that achieves and maintains a thriving natural ecological balance. The appropriate management level for each HMA and WHBT, in most cases, is expressed as a range with an upper and lower limit. The AUM allocation for wild horses and burros in HMAs and WHBTs is based on the upper limit of the appropriate management level range. Initial appropriate management levels and the boundaries of each HMA and WHBT were established through previous land use plans to ensure that public land resources, including wild horse habitat, are maintained in satisfactory, healthy condition and that unacceptable impacts on these resources are minimized. The appropriate management level ranges are based on best available science and rangeland monitoring studies. HMA and WHBT acreages by habitat type along with current appropriate management levels are shown in table 16.

Table 16. BLM herd management areas and Forest Service territories within the project area

Herd Management Area or Wild Horse and Burro Territory	BLM District Office or Forest Service Ranger District	Total Acres in Project Area	Total Acres within Bi-State Sage Grouse Habitat	Appropriate Management Level (H = Horse/ B = Burro)	Estimated Population Number
BLM					
Fish Lake Valley	Battle Mountain	67,025	24,273	54 (H)	29 (H)
Garfield Flat	Carson City	142,716	0	83–125 (H)	99 (H)
Gold Mountain	Battle Mountain	105,469	0	78 (B)	8 (H) 1 (B)
Marietta	Carson City	66,045	0	78–104 (H)	144
Montezuma Peak	Battle Mountain	77,876	0	146 (H) 10 (B)	47 (H) 67 (B)
Palmetto	Battle Mountain	118,273	17,909	76 (H)	0
Paymaster	Battle Mountain	100,590	0	38 (H)	26 (H)
Pine Nut Mountains	Carson City	104,316	23,816	119–179 (H)	293 (H)
Silver Peak	Battle Mountain	242,462	8,102	6 (B)	75 (H) 0 (B)
Wassuk	Carson City	51,743	8,356	109–165 (H)	139 (H)
Forest Service					
Montgomery Pass[1]	Inyo National Forest	112,598	0	Not available	286 (H)
Powell Mountain	Bridgeport	86,127	26,215	29 (H)	30 (H)

[1] The management of the Inyo National Forest is not affected by the proposed action.

The HMAs, WHBTs, and associated wild horse and burro populations within the planning area are managed within the established appropriate management levels and management objectives identified within the land use plans, herd management area plan, or territory management plan. The appropriate management level, objectives, and management actions may be modified in future multiple-use decisions for the grazing allotments contained within an HMA or WHBT. Various factors, including drought conditions, historic grazing, wildfires, and wild horse population growth, may adversely affect habitat and, in some instances, herd health. Wild horses that establish home ranges outside of HMA, WHBT, or herd area boundaries are removed during gathers. Wild horses are removed from private lands at the request of the landowner and after reasonable efforts to keep the animals off private lands have failed.

The estimated population size of wild horses and burros within each HMA/WHBT is based on helicopter inventories, which occur every 2 to 3 years. These population inventory flights provide information pertaining to population numbers, foaling rates, distribution, and herd health. Inventory flights can occur throughout the year. Population estimates within the planning area show a total estimated population of 1,244 horses and burros. Population estimates indicate that the number of horses and burros exceeds the aggregated appropriate management level.

Although determined by population monitoring, it is generally necessary to gather horses and burros on a 3- to 4-year schedule to ensure that numbers remain within the appropriate management level. Unfortunately, this has not been consistently possible because of insufficient funding and holding space; therefore, appropriate management levels are frequently exceeded. Following gathers, some animals are selected for return to the HMA or WHBT; excess horses or burros are placed in the adoption program, made available for sale, or in long-term holding.

Wild horses also compete with wildlife species for various habitat components, especially when populations exceed appropriate management levels or habitat resources become limited (e.g., reduced water flows, low forage production, or dry conditions).

Current conditions within the planning area show that wild horse populations continue to grow, often exceeding appropriate management levels. Wild horses will continue to be removed to regain and maintain appropriate management levels and rangeland health.

Environmental Consequences

Methodology

The information used in this report was gathered from several GIS layers and documents from the BLM and Forest Service.

Past, Present, and Foreseeable Activities Relevant to Cumulative Effects Analysis

The BLM and Forest Service have conducted a number of gather operations to remove excess wild horses and burros. In addition to gathers, the BLM and Forest Service also conduct fertility control treatments and adjust sex ratios within herds. Gathers and other management actions will continue in the future to ensure that wild horse and burro herds and the rangelands they inhabit are healthy and self-sustaining.

Alternative 1 – No Action

Direct/Indirect/ Effects. There are no direct or indirect effects if the no-action alternative is selected. Management of wild horses and burros will continue as described in the "Affected Environment" section.

Cumulative Effects

Because there are no direct or indirect effects, there are no cumulative effects if the no-action alternative is selected.

Summary of Effects

Selecting the no-action alternative will have no effect on the current management of wild horses and burros within the project area. Excess horses and burros will continue to be removed and other actions, such as fertility control, will continue to be implemented.

Alternative 2 – Proposed Action

Direct/Indirect Effects. The following HMAs/WHBTs contain Bi-state sage grouse habitat and could be affected by the proposed action: Fish Lake Valley, Palmetto, Pine Nut Mountains, Powell Mountain, Silver Peak, and Wassuk. Under standard 2b, any buffers and/or timing limitations applied by the proposed action could affect management actions, such as inventory flights and gather operations within these HMAs/WHBTs if they will cause long-term negative impact. Implementing gathers and inventory flights could be more difficult with additional restrictions in place.

If wild horse and burro management is a contributor to the sage grouse habitat desired conditions or objectives are not being met, management of wild horses and burros may need to change or appropriate management levels need to be adjusted, with appropriate NEPA analysis. Standard 2h may result in the relocation or removal of livestock watering facilities, resulting in a potential

indirect effect of increasing wild horse and burro use at the remaining facilities or riparian areas with free water.

Cumulative Effects

There are no cumulative effects of selecting the proposed action.

Summary of Effects

Implementation of the proposed action could impact six HMAs/WHBTs within the project area. Management actions could be hindered by buffers and timing limitations. The removal or relocation of stock watering facilities could result in increased pressure on riparian areas and the remaining watering facilities. Revisions to management plans and appropriate management levels may be required to meet desired conditions for Bi-state sage grouse habitat.

Effects to Minerals

Existing Condition

Physiography

Most of the project area lies within the western portion of the Basin and Range Physiographic Province and lesser amounts of the uplifted Sierra Nevada Province. The Basin and Range Physiographic Province roughly corresponds in proximity to the Great Basin, a contiguous watershed region between the Sierra Nevada and the Rocky Mountains that has no natural outlet to the sea. Extensional forces started about 17 million years ago (Ma) which created the Great Basin. These forces have resulted in the present-day landscape of alternating mountain ranges and deep, sediment-filled basins bounded by steep dipping north-south range-front faults which characterize the much of the Great Basin.

Geologic Overview

The oldest rocks in the project area are Precambrian (greater than 540 Ma) schists. Paleozoic (250 to 540 Ma) rocks are present in areas, but Mesozoic (65 to 250 Ma) age rocks comprise the most extensive pre-Tertiary (greater than 65 Ma) outcrops exposed within the Great Basin portion of the project area. Mesozoic rocks in the Great Basin Province consist of Triassic (201 to 250 Ma) and Jurassic (145 to 201 Ma) metasedimentary and metavolcanic rocks and Jurassic and Cretaceous (65 to 145 Ma) granitic rocks. Over much of the project area, these Mesozoic granitic and metamorphic rocks are overlain by an extensive sequence of Cenozoic (younger than 65 Ma) volcanic and interbedded sedimentary rocks. All of these rocks have been exposed to extensive folding and faulting from multiple tectonic events that have affected the region (modified after USDI BLM [2013]).

Zones of crustal weakness are important targets for precious metal exploration because they represent major conduits for the hydrothermal activity associated with ore deposit formation. The local and regional stresses occurring in these zones are also important in providing the mechanical ground preparation required for ore deposit emplacement. As a result, the Walker Lane structural zone is associated with the occurrence of several precious metals deposits that have been discovered within the project area as evidenced by the past establishment of numerous historic mining districts.

Mineral Potential of the Project Area

Mineral potential is described in detail in an extensive report completed for the BLM Carson City District which covers nearly half of the study area. In summary the report described the mineral potential for geothermal to be high while oil & gas is low. Solid leasable mineral potential is low while saleable minerals are moderate to high depending on the commodity. Locatable minerals have an important role in the past and will continue to have some role in the future with at least moderate potential (USDI BLM 2013).

The Forest Service and BLM Minerals Programs

On Federal lands, mineral resources are governed by the General Mining Law of 1872, as amended; those portions of the FLPMA that affect the General Mining Law; Mineral Leasing Acts of 1920, as amended; the Mineral Material Acts of 1947, as amended; the Surface Resources Act of 1955 and The Mining and Minerals Policy Act of 1970. Oil & gas leasing is guided by the Energy Policy Act of 2005. Geothermal leasing is guided by the Geothermal Steam Act of 1970 (30 USC 1004), as amended; by the Energy Policy Act of 2005, and other laws, regulations, orders and policies.

The Forest Service manages oil and gas operations on National Forest System lands under 36 CFR 228 Subpart E. Mineral leasing operations are guided by Forest Service Manual 2820 and mineral prospecting, including geophysical activities is guided by Forest Service Manual 2860. Locatable minerals and surface management regulations fall under 36 CFR 228 Subpart A and Forest Service Manual 2810. Mineral materials are regulated under 36 CFR 228 Subpart C and Forest Service Manual 2850 (USDA Forest Service 2012).

Proposed actions on either Forest Service or BLM administered lands can be divided into discretionary and non-discretionary actions. Locatable exploration and mining are non-discretionary and a reasonable plan of operations must be processed and approved if the mineral estate is open to entry, whereas all other actions are discretionary and the land management agency can choose to permit as proposed, modify, or disallow the proposal.

Discretionary Actions.

Saleable Minerals: Salable minerals are commonly referred to as sand and gravel, aggregates, or mineral materials, and consist of common varieties of sand, stone, gravel, cinders, clay, diatomite, pumice and pumicite as described under the Materials Act of 1947 and the Surface Resources Act of 1955. Salable mineral disposals on both BLM and Forest Service administered lands are disposed of by sale contracts or free use permits.

Most of the current saleable products in the study area are small sand and gravel sales, free use permits, and Nevada Department of Transportation gravel material sites (USDI BLM 2013b). The Forest Service currently has no saleable sites in the project area and only occasionally uses mineral material sites for road maintenance purposes.

One diatomite mine is in the study area, the Basalt Mine operated by Grefco Minerals Inc. (Visher and Conyer 2012), but is not located within Bi-state sage grouse habitat.

Leasable Minerals: Leasable minerals are subdivided into two categories, solid leasable and fluid leasable. The BLM holds authority over leasable activities. Solid leasables include phosphate, coal, oil shale, sodium, and nitrate. Fluid leasables include oil & gas and geothermal resources. The BLM grants access to leasable resources through a formalized leasing process on both Forest Service and BLM administered lands. A leasing analysis and corresponding decision

is prepared in order to make determinations as to the availability of certain lands to be leased. A Federal lease grants "the exclusive right to drill for, extract, produce, remove, utilize, sell, and dispose of all the particular resources in the lands described within the lease form" (USDA Forest Service 2012).

Solid Leasable: Solid leasables include phosphate, coal, oil shale, native asphalt, sodium, potassium, sulfur, and nitrate. There are currently no authorized leases for these commodities within the study area. However, there is one exploration application received in 2012 for potassium from alunite on Forest Service lands within the study area. The BLM is currently processing this application.

Fluid Leasable: Fluid leasables include oil & gas and geothermal resources.

Oil and Gas: The BLM has completed a leasing decision for oil & gas for the BLM lands in the study area; however, there are no authorized oil & gas leases in the study area and there is no oil & gas leasing decision on the Forest Service lands.

Geothermal: Geothermal energy has been the bulk of the leasable exploration and development in the study area. Leasing decisions have been made on both the BLM lands (USDI BLM 2008) and Forest Service lands (USDA Forest Service 2012). Most of the leases have been offered competitively for electrical generation that will then be transported by powerlines to municipalities in Nevada and California. There are approximately 11 geothermal leases for about 26,992 acres within the study area.

One geothermal power plant is within the study area, but is located on private lands. The Wabuska Geothermal Power Plant is the first plant built in Nevada and the world's first geothermal biodiesel plant (Sapp 2007). The plant is small and currently produces 1.2 megawatts of power (GEA 2013).

The State of Nevada contains 563 leases for 1,187,190 acres and 26 producing leases for geothermal electrical energy production in 2012. There are also three geothermal projects on BLM lands in the study area: Clayton Valley, Alum, and Silver Peak (Johnson 2012).

Non-discretionary Actions.
Locatable: Locatable mineral commodities produced in the project area include gold, silver, copper, iron, tungsten, lead, and zinc (USDI BLM 2012b). Nevada is a major producer of precious metals and is currently ranked as the third or fourth largest gold producing region in the world in terms of its annual production. In 2010 Nevada produced 5.3 million ounces of gold, by far out-producing any other state. Nevada also produced 7.3 million ounces of silver and just under 128 million pounds of copper (Johnson 2012).

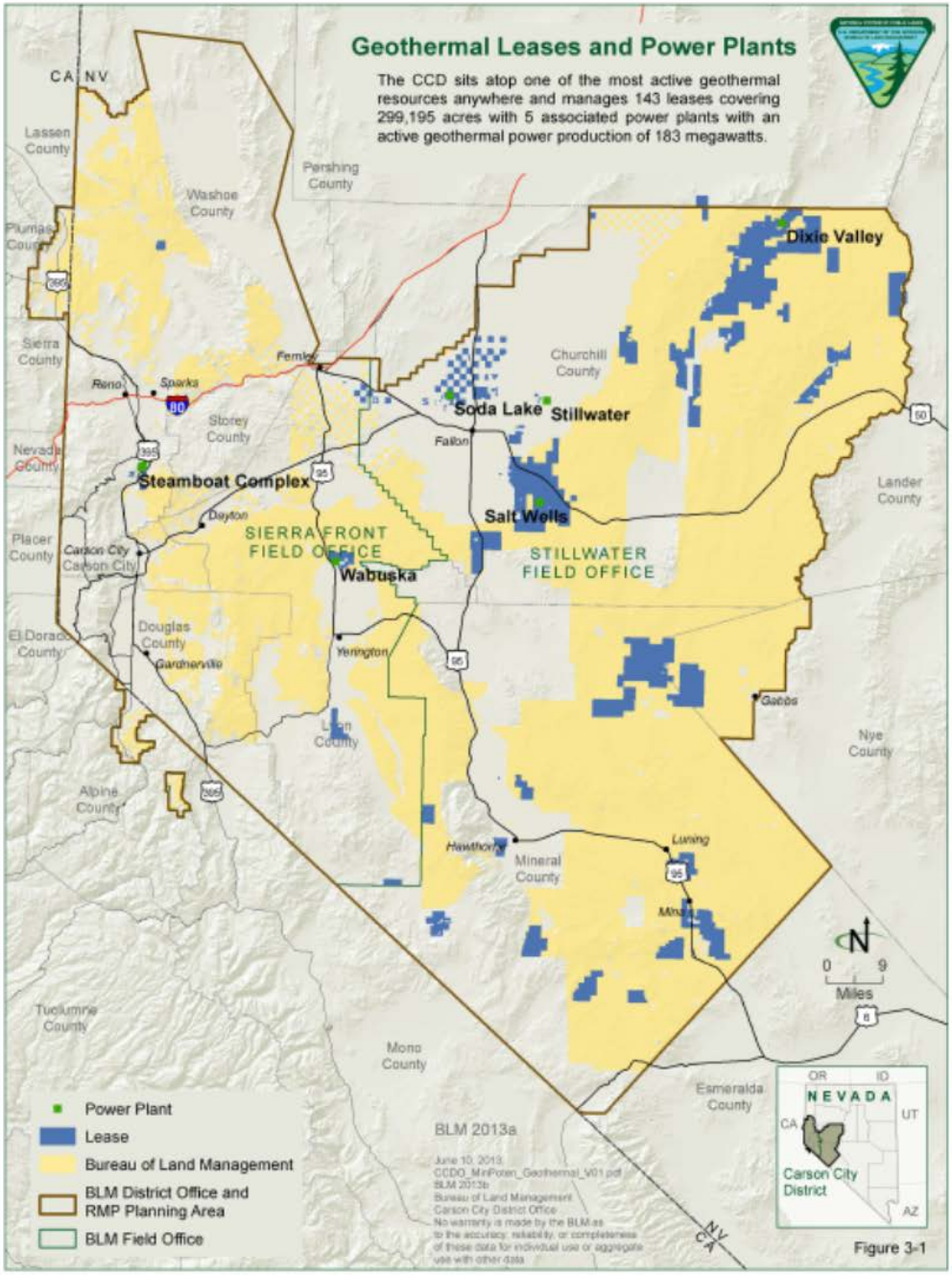

Figure 4. Geothermal leases and power plants within the project area

Six BLM active plans of operation fall within the project area. Two plans of operation are related to copper exploration or mining and four for precious metals. These include Candelaria (600 acres), Buckskin Mine (18 acres), Bovie Lew (10 acres), Mason Pass (4.4 acres), Ann Mason (14 acres), and the MacArthur Pit (43 acres) (USDI BLM 2013). Twenty-five plans of operation are active on the Forest Service in Nevada (USDA Forest Service 2012) and five in California.

The Silver Peak Mine on BLM and private lands produces up to 6,000 tons per year of lithium carbonate equivalent from brines (NDEP 2012). The Borealis Mine is also located in the study area on Forest Service administered lands and restarted gold production in 2012 from reworking previous heap-leach ore. Gold production in the first quarter of 2013 was approximately 3,300 ounces (Gryphon 2013).

Active mining claims in the project area numbered 28,174. Each claim is a maximum of about 20 acres. So the maximum area held under active locatable mining claims is 563,480 acres or 880 square miles.

Environmental Consequences

Methodology

The proposed action limitations and mitigations impacts on exploration, development, and mining or geothermal energy production will be analyzed by comparing the number of minerals projects, mining claims, leases and so forth to the number of those within the habitat. This will help to indicate the intensity of the impact. The types of impacts the proposed action will have on the minerals program will also be examined by explaining the usual types of limitations and mitigations that may be applied. This discussion will help identify the context and magnitude.

Incomplete and Unavailable Information

There is generally good information available on geothermal drilling projects, active mines, and other minerals projects that may impact this analysis.

Spatial and Temporal Context for Effects Analysis

The effects analysis and cumulative impacts are discussed for the area within the study boundary. The no-action alternative will describe the current condition of the minerals activities which include current exploration, development, and mining or geothermal energy production in the study area. The proposed action will be analyzed by evaluating the implementing objectives, guidelines, and standards on the minerals projects and potential future impacts on the minerals program.

Past, Present, and Foreseeable Activities Relevant to Cumulative Effects Analysis

Past Actions. Vein silver and gold deposits were the most important discoveries in the 1850s to the early 1900s as they accounted for almost all the precious metal production. In the early 1970s, when the price of gold was allowed to react to market demand the price fluctuated significantly and investors began to encourage expansion of gold exploration and mining again in Nevada. Since the early 1900s the emphasis of exploration shifted to finding and developing large, low-grade deposits, which became economical using cyanide heap-leach methods for gold and silver recovery. Exploitation of these large low grade precious metal deposits peaked in the study area in the mid-1990s (USDI BLM 2013b).

In the study area, nonmetallic minerals activity began in the early 1860s with the exploitation of salt deposits from playa lakes at various locations in Churchill and Mineral counties (USDI BLM

2013b). Sand and gravel pits have been in existence for some time as there are abundant deposits near particular elevations largely on BLM administered lands associated with ancient lake deposits. No past actions are known that limit the availability of mineral resources.

Present Actions: Nonmetallic (industrial) salable minerals produced in the study area and surrounding area include salt, borates, gypsum, fluorite, clay, zeolite, limestone, and diatomite (USDI BLM 2013b). Most of the saleable products are from numerous small pits excavating sand and gravel for road maintenance and construction. There are no leases for oil & gas activity or solid leasable minerals in the study area.

There are various exploration notices and plans of operation for locatable minerals in the study area. Several small operating mines include the Basalt (diatomite) Mine, Silver Peak Lithium Mine on BLM lands, and the Borealis Gold Mine on Forest Service lands.

Active geothermal projects include the Aurora project on Forest Service lands and the Silver Peak, Alum, and Clayton Valley projects on BLM lands. The Humboldt-Toiyabe National Forest Geothermal Leasing EIS was completed in 2012 and the Forest Service is processing some leasing requests for the BLM to consider leasing.

Reasonably Foreseeable Future Actions: The Nevada Division of Environmental Protection (NDEP) has decided in June 2013 to grant surface disturbance for a reclamation permit consisting of 362.7 acres of private land and 4.9 acres of public land for the Pumpkin Hollow copper project near Yerington, Nevada (NDEP 2013).

Also, the Senate Committee on Energy and Natural Resources passed the Lyon County Economic Development and Conservation Act (S. 159 or "Land Bill") on June 18, 2013. This bill was introduced on January 28, 2013, and would in summary:

> The Bill directs the Secretary of the Interior to convey to the city of Yerington, Nevada, identified Federal land in Lyon and Mineral counties. Designates identified Federal land in Nevada managed by the Forest Service, to be known as the Wovoka Wilderness, as wilderness and as a component of the National Wilderness Preservation System and would withdraw the mineral estate from certain surrounding National Forest System Lands (Heller and Reid 2013).
>
> The Land Bill would convey approximately 10,400 acres of land to the City of Yerington, placing the entire Pumpkin Hollow project under local and Nevada State oversight. Combined with Nevada Copper's 1,500 acres of private land, the bill would provide approximately 11,900 acres total for mine development; power, water, and road infrastructure that in turn would provide the city with lands for ancillary commercial and industrial development (Bonifacio 2013).
>
> Preliminary feasibility studies of both open pit and underground mining for Pumpkin Hollow have been prepared and indicate a current mineable measured and indicated reserve of 27.6 million tons grading 1.49 percent Cu with significant amounts of gold and silver (Bryan et al. 2012).

Alternative 1 – No Action

Direct Effects. There are no direct effects to mineral activities under the no-action alternative. Management of mineral resources would continue under the current Forest Plan and RMPs.

Indirect Effects. Under the no-action alternative, mineral activities would proceed much as they are currently. The BLM would continue to use the Instruction Memorandum NV-2013-009 for Bi-state Sage Grouse for Minerals Activities (USDI BLM 2012c). The Forest Service may put more attention on the analysis of sage grouse for each proposed action, but would not have the objectives, guidelines, and standards to direct the analysis.

The discretionary actions of fluid leasable minerals, solid leasable minerals and saleable minerals can be condensed into geothermal and saleable minerals since oil &gas and solid leasable are virtually non-existent. Therefore, discussion in this section is divided into discretionary actions (geothermal and saleable) and nondiscretionary actions (locatable).

Discretionary Actions: Discretionary actions on BLM land for proposed actions and past authorized actions operators would be asked to minimize or eliminate impacts to Bi-state sage grouse or the preliminary priority habitat. If analysis indicates more than a minor impact to Bi-state sage grouse then the BLM determines, in coordination with the respective state wildlife agency, that the action and mitigation measures would cumulatively maintain or enhance Bi-state DPS preliminary priority habitat, the proposed action authorization decision must be forwarded to the Bi-state DPS Technical Working Team for their review. If this group is unable to agree on the appropriate mitigation for the proposed authorization, then the proposed decision must be forwarded to the EOC, when appropriate, for its review. If the EOC is unable to agree on the appropriate mitigation for the proposed authorization, the EOC will coordinate with and brief the BLM State Director for a final decision in absence of consensus. This process will go on until a land use plan amendment is completed (USDI BLM 2012c).

In addition to considering opportunities for onsite mitigation, the BLM will, to the extent possible, cooperate with project proponents to develop and consider implementing appropriate offsite mitigation that the BLM, coordinating with the respective state wildlife agency, determines would avoid or minimize habitat and population-level effects (USDI BLM 2012c).

For geothermal proposals the Forest Service would use the direction in the Humboldt-Toiyabe Geothermal Leasing EIS and Decision (USDA Forest Service 2012) or the Aurora Geothermal EA Supplement and Decision (USDA Forest Service 2012b) depending on location to guide leasing stipulations, conditions of approval, and final analysis.

Nondiscretionary Actions: The BLM would continue to request that current holders of notices and plans of operation modify their operations to avoid or minimize adverse effects on Bi-state DPS and its habitat. Operators must be informed in the request that compliance is not mandatory. New notices and plans of operation would be required to include measures to avoid or minimize adverse effects to Bi-state DPS populations and its habitat. The BLM would continue to ensure that new notices and plans of operation comply with the requirements in 43 CFR 3809 to prevent unnecessary or undue degradation (USDI BLM 2012c).

Cumulative Effects

There are no effects from the no-action alternative on the management of mineral resources; and there would be no cumulative effects for the no-action alternative.

Alternative 2 – Proposed Action

Direct Effects. The discretionary actions of fluid leasable minerals, solid leasable minerals and saleable minerals can be condensed into geothermal and saleable minerals since oil &gas and

solid leasable are virtually non-existent. Therefore, discussion in this section is divided into discretionary actions (geothermal and saleable) and nondiscretionary actions (locatable).

Discretionary Actions: There are currently three geothermal leases inside the habitat consisting of approximately 8,100 acres. This equates to about 30 percent of the current leased acres are within the habitat. The Nevada Department of Transportation operates most of the gravel pits within the project area consisting of approximately 15,930 acres of disturbance of which 12 percent or 1,850 acres are inside the habitat. The types of impacts from mineral exploration, development or mining on sage grouse includes temporary and long-term surface disturbance which can be reclaimed and revegetated with native plants in the future. Other impacts include air quality (dust largely), sound, visual, and physical hazards.

Conversely, the impacts of implementing the proposed action on the discretionary minerals actions would likely include timing limitations, such as seasonal use restrictions, on operations or surface disturbing activities, daily timing limitations, processing placement alternative analysis, mitigating some proposed actions due to the impact on habitat, meeting specific revegetation establishment conditions and diversity, and off-site mitigation to offset the surface disturbance of habitat. Other mitigation measures might include underground placement of pipelines and powerlines inside habitat, color or height requirements for certain structures, and so on. These requirements would have a certain negative financial impact on the proponent, but will vary greatly depending on the specific project.

Discretionary operations will be carefully considered, especially if the purpose and need for the commodity can be met elsewhere outside the habitat. For example, a gravel sale out of a current pit inside the habitat may be denied if gravel can be readily attained from a pit within reasonable distance that occurs in a pit outside the habitat. Exploration permits for gravel would be encouraged to take place outside habitat.

Several commodities have not been analyzed for leasing, such as solid minerals and oil & gas on National Forest System lands. Future leasing analysis, if ever requested, would be evaluated and constrained by the objectives, guidelines and standards of the proposed action in this analysis.

Impacts on the Future of Discretionary Actions: Saleable products such as sand and gravel will continue to have the same demand as present or increase slightly due to increased home development. However, there appear to be enough existing gravel pits or exploration potential outside of habitat and would not likely cause much of an increase in price to haul the material the additional distance.

Solid leasable and oil & gas would likely have little to no change since the probability of discovery of economic quantities is low (USDI BLM 2013). Geothermal exploration and development would likely have less activity due to restrictions and increased mitigation costs.

Nondiscretionary Actions: There are approximately 1,500 active mining claims (19 percent) inside the habitat out of the 28,174 active mining claims in the study area. Nondiscretionary actions from locatable exploration or mining proposals would have potentially the same impacts as discretionary mineral actions, except that a reasonable plan of operations cannot be denied, but would have practicable mitigation measures to minimize the impacts on sage grouse and the habitat. Some mining proposals might also have some portions of the proposed surface disturbance that cannot be revegetated, such as pit high-walls. Off-site mitigation can be requested for these actions but the operator is not obligated to comply.

Impacts on the future of Nondiscretionary Actions: The future of various commodities prices is expected to rise and fall similar to the past, and thus, the exploration and development of these commodities will do the same. Since the study area has many different types of mineral potential. The area will likely see continued exploration for more than one commodity.

Since this proposed action does not withdrawn any Federal lands from mineral entry, mining claims will likely continue to be located, but may have a somewhat reduced impact to sage grouse due to the increased time to process a plan of operation and increased cost to produce a product. An increased time to process a plan of operations has a definable negative impact on minerals actions because the ability to raise capital to explore or develop is based on a historically fluctuating commodity price, no matter what the commodity. The longer it takes to approve a plan of operations the more financial impact to the operator and the less likely that they will be able to implement their project. This is evident from the historic plan of operations processed on the Humboldt-Toiyabe National Forest. The Forest Service is legally mandated to process locatable plans of operation in a timely manner.

Indirect Effects. The cash costs as well as the capitol costs to explore, develop, mine, and produce mineral products will likely go up by some unknown amount and will vary depending on the location and mitigation applied to an individual project. These increased costs will negatively impact the number of jobs available in the minerals sector.

Cumulative Effects

The Pumpkin Hollow copper deposit discussed in reasonably foreseeable future actions is not in Bi-state sage grouse habitat and is about 10 to 15 miles from the nearest habitat and not likely to have any direct or indirect impact on Bi-state sage grouse. The Economic Development and Conservation Act (S. 159) could be passed at some future date and made law which in its current form would designate a wilderness area and certain other lands withdrawn from mineral entry which would benefit the Bi-state sage grouse by not allowing most minerals activities in the area of the wilderness and withdrawal.

There are no cumulative effects from past or present minerals actions. There are no present or future actions that, when combined with the proposed amendment, would incrementally alter how mineral resources are managed in the amendment area.

Effects to Fire and Fuels Management

Existing Condition

Wildland fire management has been shaped by several forces in the past 100 years. Nationally, catastrophic fires, with loss of life and property, at the beginning of the 20th Century resulted in full (100 percent) suppression of fires for approximately 70 years. Due to successful suppression actions, this approach was questioned as fuel loads increased in forests. As a result, in the 1980s land managers instituted a let-burn policy which resulted in several fires becoming larger than intended. These fires, followed by another historic fire season in 1994, caused management to implement prescribed burning programs to reduce fuel loads and help prevent large catastrophic fires. The focus on prescribed fire remained strong until several prescribed fires escaped in 2000. After the 2000 wildfire season, the National Fire Plan (National Fire Plan 2009) was developed. The plan emphasizes developing firefighting resources, rehabilitating fire-damaged lands, and hazardous fuels reduction treatments. In Nevada, the issues caused by a century of fire suppression and which are addressed in the National Fire Plan, are compounded by the presence of cheatgrass (*Bromus tectorum*) an invasive annual grass species. The lifecycle of cheatgrass is

such that when fires occur, a positive feedback system is created in which cheatgrass will take over an ecosystem from native species and alter the fire regime to one in which fires occur more frequently and become larger.

Fire Regime Condition Class

Fire regime condition class (FRCC) is an interagency, standardized tool for determining the degree of departure from reference condition vegetation, fuels and disturbance regimes (FRCC 2011). FRCC uses various parts of a biophysical setting[10] by comparing the current conditions to document reference conditions; then gives a rating for each biophysical setting based on various factors including succession conditions, fire frequency[11] and fire severity[12] . The three condition classes FRCC uses to describe a biophysical setting departure from reference condition are defined in the following table.

Table 17. FRCC condition classes

Condition Class	Description
Low departure (<33%) from reference condition is defined as Condition Class 1	Vegetation composition, structure, and fuels are similar to those of the natural regime and do not predispose the system to risk of loss of key ecosystem components. Wildland fires are characteristic of the natural fire regime behavior, severity, and patterns. Disturbance agents, native species habitats, and hydrologic functions are within the natural range of variability.
Moderate departure (33–66%) from reference condition is defined as Condition Class 2	Vegetation composition, structure, and fuels are different from those of the natural regime and predispose the system to risk of loss of key ecosystem components. Wildland fires are moderately uncharacteristic compared to the natural fire regime behaviors, severity, and patterns. Disturbance agents, native species habitats, and hydrologic functions are outside the natural range of variability.
High departure (>66%) from reference condition is defined as Condition Class 3	Vegetation composition, structure, and fuels are very different from the natural regime and predispose the system to high risk of loss of key ecosystem components. Wildland fires are highly uncharacteristic compared to the natural fire regime behaviors, severity, and patterns. Disturbance agents, native species habitats, and hydrologic functions are substantially outside the natural range of variability.

National and State BLM fire policy requires current and desired resource conditions related to fire management be described in terms of three condition classes. The FRCC system measures the extent to which vegetation departs from reference conditions (or how the current vegetation differs from a particular reference condition). Departures from reference condition could be a result of changes to key ecosystem components such as vegetation characteristics, fuel composition, fire frequency, fire severity, and pattern, as well as other associated disturbances, such as insects and disease mortality. The classification system is used to categorize existing ecosystem conditions and to determine priority areas for treatment as mandated by national direction (USDI BLM 2013).

[10] Biophysical settings are the primary environmental settings used to determine a landscape's natural fire regime and fire regime condition class (Hann and Bunnell 2001; Hann and Strohm 2003).
[11] Fire frequency is defined as the average number of years between fires or the mean fire interval (Baker and Ehle 2001; Hann and Bunnell 2001).
[12] Fire severity is defined as the effects of a fire on the vegetation and forest floor, and is measured in terms of surface and over story fuel consumption and heat transference to the organic and mineral soil (DeBano et al. 1998).

An FRCC assessment has been done for the planning area utilizing LANDFIRE national layers. Though there may be inaccuracies in the data inputs for this planning area, the coarse-scale results are helpful to broadly identify current conditions. The FRCC assessment outlines the fire regime group of each setting, and the acres of each condition class. The analysis shows more than half of the project area is classified as "highly departed" from reference condition. The "moderate" and "high" departure ratings could be a concern because it is likely these areas will continue to move further from reference condition without management or fire disturbance.

Table 18. Current FRCC condition classes in the Bi-state sage grouse project area

Condition Class	Description	Percent of project Area
I	Low vegetation departure	14
II	Moderate vegetation departure	26
III	High vegetation departure	50
	Other (including water, urban, barren, sparsely vegetated and agricultural lands)	10
	Total	**100**

Fuels Reduction in Pinyon-juniper Woodlands

Pinyon-juniper woodlands were once viewed as being at a minimal wildfire risk, with low tree stand densities and a lack of continuous and dense ground cover. But as certain conditions arose and persisted—an ongoing drought, a region-wide infestation of the pinyon engraver beetle (*Ips confusus*), and a buildup in stand densities and fuel loadings—the potential for more severe wildfires has also increased (Gottfried et al. 2011).

Prescribed fires and fire use strategies will be more effective in controlling western juniper encroachment if they occur in the earlier stages of succession. The combination of young western juniper being more susceptible to fire damage and fuel loads that allow the manager more opportunity to perform a prescribed burn increase the chances of minimizing the encroachment of western juniper into sagebrush grasslands.

Throughout the western United States fire seasons are generally lasting longer with uncharacteristically larger and more severe fires. It is anticipated that climate change will further extend fire seasons. Invasive plants are also of concern and have expanded to create extensive areas of fine fuels where fires spread rapidly. With the potential listing of the greater sage-grouse as a threatened species, response to wildfires in greater sage-grouse habitat could change from limited or conditional suppression (indirect, least-cost tactics) to full protection. These changes increase costs and add complexity to wildland fire management.

Alternative 1 – No Action

Alternative 1 would maintain current land management direction. Sage grouse habitat will continue to be a priority after life and property for wildfire suppression actions. Fuel treatments will continue to be designed with objectives to protect existing sagebrush ecosystems, modify fire behavior, restore native plants, and create landscape patterns that benefit sage grouse habitat. These current and future planned fuels reduction treatments would also reduce surface, ladder, and crown fuels and change the fuel model profile.

Cumulative Effects

Maintaining current management combined with future fuels reduction activities would modify fire behavior by contributing to the overall reduction of fuels and modification of the fuel profile, thereby reducing fire behavior potential within and adjacent to the project area. Invasive plants will continue to be of concern in fire management as most fire management activities are either surface or vegetation disturbing and subsequently, the impacts from these activities include increased susceptibility to exotic species (UDSI BLM 2013).

Alternative 2 – Proposed Action

The proposed action would amend the Toiyabe National Forest Land and Resource Management Plan and the BLM's Battle Mountain/Tonopah Resource Management Plan and the Carson City Field Office Consolidated Resource Management Plan to reflect the following.

Goal 3 and the associated objectives, and standards and guidelines all have some relevancy to how fire is managed in the amendment area.

Goal 3: In priority habitat, fuel treatments are used as a management tool when the benefits to Bi-state sage grouse clearly outweigh the risks; otherwise fire is suppressed in priority habitat after life and property.

Objective: By 2024 proactive fire prevention treatments will have been implemented in or adjacent to 30 percent of the identified priority habitat.

Objective: By 2019, risk of unwanted fire in priority habitats shall be 20 percent lower compared to conditions in 2014.

Standard: Agency personnel, contractors, and permit holders working in areas with known weed infestations shall clean vehicles of dirt, mud, and visible plant debris before entering a different area to reduce the spread of noxious weeds.

Guideline: Where possible do not use fire, including brush control, as a management tool in areas where there is threat of cheat grass invasion, sagebrush areas with less than 12-inches of annual precipitation or 12-inches of soil, or areas where the sagebrush cover would be reduced to less than 15 percent.

Guideline: Do not use fire as a management tool in areas where the risk of escaped fire could cause negative long-term impacts.

Guideline: When wildfires occur, resource advisors should identify areas important to Bi-state sage grouse (e.g., leks).

Guideline: Priority for suppression of non-management wildfire in priority habitat should be immediately after life and property.

Direct/Indirect Effects. Alternative 2 would provide additional protection and restoration measures in sagebrush habitat. Future fuels reduction treatments under alternative 2 would also be designed and implemented to promote sage grouse habitat, emphasize protection of existing sagebrush ecosystems, and reduce the threat of invasive plants, in addition to meeting fuel reduction priorities. Prescribed fires and fire use strategies will be more effective in controlling western juniper encroachment if they occur in the earlier stages of succession. Prescribed fire is a tool that can assist in the recovery of sagebrush habitat in some vegetation types, and many of

the expected treatments would be located adjacent to private land and reduce fuel loading to acceptable levels meeting fire and fuels management objectives. The combination of young western juniper being more susceptible to fire damage and fuel loads that allow the manager more opportunity to perform a prescribed burn increase the chances of minimizing the encroachment of western juniper into sagebrush grasslands habitats.

Cumulative Effects

Fire suppression has generally been effective in these areas and would probably continue into the future, but may become increasingly difficult if fuels accumulate in the absence of frequent, low intensity fire and mechanical treatment. Although there are conservation measures in place to protect habitat on adjacent Federal, state and private lands, fire and fuels reduction activities could contribute to the overall reduction of sage grouse habitat. Throughout the western United States fire seasons are generally lasting longer with uncharacteristically larger and more severe fires. It is anticipated that climate change will further extend fire seasons. Invasive plants are also of concern and have expanded to create extensive areas of fine fuels where fires spread rapidly.

Short-term Uses and Long-term Productivity

NEPA requires consideration of "the relationship between short-term uses of man's environment and the maintenance and enhancement of long-term productivity" (40 CFR 1502.16). As declared by the Congress, this includes using all practicable means and measures, including financial and technical assistance, in a manner calculated to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans (NEPA Section 101). Discussion related to short-term uses and long-term productivity can be found in detail under individual resource discussions.

All alternatives may result in implementation of ground-disturbing activities to meet objectives. Such ground-disturbing activities would produce short-term effects to soil, water quality, and habitat while providing the long-term benefits in terms of the restoration and conservation of Bi-state sage grouse and its habitat.

Unavoidable Adverse Effects

As a programmatic decision with no physical action there are no unavoidable adverse effects. Implementation of any of the alternatives would result in some unavoidable adverse effects. The alternatives were designed to move resources toward desired conditions, but to accomplish those goals some unavoidable adverse effects would result. These effects vary by resource and are discussed in other parts of this chapter.

Irreversible and Irretrievable Commitments of Resources

Irreversible commitments of resources are those that cannot be regained, such as the extinction of a species or the removal of mined ore. Irretrievable commitments are those that are lost for a period of time such as the temporary loss of timber productivity in forested areas that are kept clear for use as a powerline rights-of-way or road.

Due to the programmatic nature of the proposed amendment, it would not result in irreversible actions or alternatives. No alternative makes any irretrievable or irreversible commitments of resources. This amendment includes goals, objective, standards and guidelines to help direct

management of activities occurring in Bi-state sage grouse habitat. There is no commitment of resources, no prohibitions of activities, no directions that cannot be changed or altered to allow future actions.

Other Required Disclosures

Several of the laws and executive orders listed in chapter 1 require project-specific findings or other disclosures. They apply to all alternatives considered in detail in this EIS.

Legislative and/or Regulatory

Endangered Species Act. Federally threatened or endangered species known to reside or nest in the project area will not be affected by adoption of the regulatory measures proposed in this DEIS.

National Historic Preservation Act. Cultural resource surveys have not been completed for this project. Nothing in this proposed action requires ground-disturbing activity that could impact historic properties located in the planning area. Cultural resource inventories will continue to be required for all site-specific project activities.

Clean Water Act. Nothing in this proposed action will change or modify standards, guidelines, and direction contained in the Forest Plan, BMPs, and applicable FSM and FSH direction or the BLM's Resource Management Plans. Ongoing and future site-specific projects will adhere to these standards, guidelines, and direction, and by doing so will continue to be consistent with the Clean Water Act and amendments. No permits are required for any of the alternatives.

Clean Air Act. There are no emissions related to implementation of any of the proposed action and selection of the proposed action or alternatives will are exceed State of Nevada Ambient Air Quality Standards (46 FR 43141).

Effects on Prime Farm Land, Range Land, and Forestland

No prime farm land or range land would be adversely affected by the action alternatives. Forestland would maintain its long-term productivity.

Effects on Civil Rights, Women, and Minorities

This project would not have adverse effects on civil rights, women, or minorities.

Executive Orders

Executive Order 11593 (Cultural Resources). Directs Federal agencies to provide leadership in preserving, restoring, and maintaining the historic and cultural environment of the nation. This action will not impede the ability of the Forest Service or BLM to follow this direction.

Executive Order 11988 (Floodplains). Directs Federal agencies to take action to avoid, to the extent possible, the long- and short-term adverse impacts associated with the occupancy and modification of floodplains. A floodplain is defined as "the lowland and relatively flat areas adjoining inland and coastal waters including flood prone areas of off shore islands, including at a minimum that area subject to a 1 percent or greater of flooding in any given year." Forest Plan standards and guidelines identify floodplains as a process group within riparian management areas and provide direction to avoid development in these areas. The proposed action does not propose occupation or modification of floodplains.

Executive Order 11990 (Wetlands). Requires Federal agencies to avoid, to the extent possible, the long-term and short-term adverse effects associated with the destruction or modification of wetlands. The proposed action does not propose occupation or modification of wetlands.

Executive Order 12898 (Environmental Justice). Directs Federal agencies to identify and address the issue of environmental justice, which concerns adverse human health and environmental effects of agency programs that disproportionately affect minority and low-income populations. For the purpose of screening for environmental justice concerns, minority and low-income populations are not a concern in Alpine, Douglas, Esmeralda, Lyon, Mineral, or Mono counties. The widely dispersed area over which this management direction takes place makes it unlikely that any particular minority or low-income population in Alpine, Douglas, Esmeralda, Lyon, Mineral, or Mono counties is disproportionately impacted. Implementation of the proposed action or alternatives for the Bi-state sage grouse project will not cause adverse health, social, or environmental effects that would disproportionately affect minority and low-income populations.

Executive Order 13007 (American Indian Sacred Sites). Directs Federal agencies to accommodate access to and ceremonial use of American Indian sacred sites by Indian religious practitioners and to avoid adversely affecting the physical integrity of such sacred sites. Under the proposed action and alternatives the agencies will continue to accommodate access to and ceremonial use of American Indian sacred sites by Indian religious practitioners and to avoid adversely affecting the physical integrity of such sacred sites.

Executive Order 13186 (Migratory Birds). Directs Federal agencies taking actions having or likely to have a negative impact on migratory bird populations to work with the USFWS to develop an agreement to conserve those birds. Because of the programmatic nature of the proposed action and alternatives, there will be no negative impacts on migratory bird populations. The agencies will continue to work with the USFWS to develop an agreement to conserve those birds.

Preparers and Contributors

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Glossary

Active lek ~ A lek in which two or more males are detected for 2 or more years within a 5-year period.

Best available science ~ The order of preference is generally peer-reviewed publications, technical reports, dissertations and theses, gray literature, and finally, expert opinion.

Critical disturbance period ~ Period during which disturbance is most damaging to productivity or survival; specifically, March 1 through June 30.

Desired condition ~ Description of specific social, economic, and/or ecological characteristics of the plan area, or a portion of the plan area, toward which management of the land and resources should be directed, described in terms that are specific enough to allow progress toward their achievement to be determined, but do not include completion dates.

Diffuse disturbance ~ Pressure is exerted over broad spatial or temporal scales.

Discrete disturbance ~ Having a distinct measureable impact in space and time.

Discretionary ~ Action is not legally mandated and can be influenced by agency's judgment or preference.

Distinct population segment (DPS) ~ A vertebrate population or groups of populations that is discrete from other populations of the species and significant in relation to the entire species.

Expert opinion ~ In the absence of non-contradictory, peer-reviewed, context-specific research, the lead biologist may use expert opinion. Experts are people that have contributed to the best available science on the resource in questions, agency designees for the resource, and other biologists/managers with field experience managing the resource.

Goal ~ Concise description of desired future conditions that are written in broad, general terms without specific dates for achievement.

Guideline ~ A constraint on decision-making that allows for departure from its terms, as long as the purpose of the guideline is met.

Long-term negative impact ~ An impact that disrupts birds for a season or more, or an impact that precludes a season's activity.

Major disturbance ~ An impact that disrupts the birds and is likely to cause a negative impact (e.g., direct mortality from vehicles traffic, noise above 55 decibels, continual traffic).

Minor disturbance ~ An impact that disrupts birds, but is unlikely to cause a negative impact (e.g., occasional flushing from occasional vehicle travel between 10am and 5pm).

Mitigation ~ Includes actions that: (1) Avoiding the impact altogether by not taking a certain action or parts of an action; (2) minimizing impacts by limiting the degree or magnitude of the action and its implementation; (3) rectifying the impact by repairing, rehabilitating, or restoring the affected environment; (4) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; or (5) compensating for the impact by replacing or providing substitute resources or environments.

Negative impact ~ An action that degrades/reduces the condition or distribution of priority habitat, the bird's productivity or survival, or the bird's abundance or distribution.

Neutral impact ~ An action that does not change the condition or distribution of priority habitat, the bird's productivity or survival, or the bird's abundance or distribution.

Non-discretionary ~ Action where agency is legally mandated to act as part of required duties without exercise of personal judgment or preference.

Objective ~ Concise, measurable, time-specific statements of desired rates of progress toward desired conditions.

Positive impact ~ An action that improves/increases the condition of priority habitat, the bird's productivity or survival, or the bird's occupancy or distribution.

Regulatory Mechanism ~ Also known sometimes known as "management direction", a regulatory mechanism refers to Forest Plan standards and guidelines that define the sidebars within which the Forest, or BLM will need to work when implement or authorizing projects. They can include limitations of time frames, locations, noise level to minimize disturbance. They can also include thresholds or limits on the extent or amount of work that can be completed in habitat or to improve habitat.

Short-term impact ~ An impact lasting for a portion of a season that will disrupt, but not preclude, that season's activity.

Standard ~ A mandatory constraint on decision-making. Not meeting a standard would require a site specific forest plan amendment.

Structures ~ Anything composed of parts and arranged together in some way (includes fences, building, derricks, platforms and any number of man-made elements that can be found on NFS lands and BLM public lands).

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Appendix A: Bi-state Sage Grouse Interim Guidance and Management Protection

This appendix is in three parts:

A1: Interim Conservation Recommendations for the Greater Sage-grouse and Its Habitat, Forest Service Regions 1, 2, and 4

A2: BLM Bi-state Distinct Population Segment of Greater Sage-grouse Interim Management Policies and Procedures

A3: The Humboldt-Toiyabe National Forest Summary of Current Direction and Best Management Practices for the Protection of the Bi-state Sage Grouse

A1: Interim Conservation Recommendations for the Greater Sage-grouse and Its Habitat, Forest Service Regions 1, 2, and 4

Application of Recommendations

In March 2010, the U.S. Fish and Wildlife Service (USFWS) published its petition decision for the greater sage-grouse (hereinafter sage grouse) as "Warranted but Precluded" for listing under the Endangered Species Act (75 FR 13910 – 14014; 03/23/2010). The USFWS identified habitat loss and fragmentation from wildfire, invasive plants, energy and infrastructure development, urbanization, and agricultural conversion as the primary threats to the species throughout its range. Inadequacy of regulatory mechanisms and conservation measures in state and Federal land management plans was also identified as one of the major factors in the USFWS's finding on sage grouse. The Forest Service is engaged in a planning process, which includes NEPA disclosure and public input, to determine whether to amend 20 LRMPs to incorporate sage grouse conservation measures, with a target decision date of September 2014. The goals of this planning process are: to reduce risks to sage grouse and its habitat; maintain ecosystems on which sage grouse depends and to conserve habitat necessary to sustain sage grouse populations to an extent that precludes the need for its listing under the Endangered Species Act.

The purpose of these recommendations is to promote conservation of sustainable sage grouse populations and their habitats by identifying information sources and considerations that should be included in project analysis and decision making taking place before the plan amendment process can be completed. The recommendations incorporate the following principles to protect and conserve sage grouse habitat:

1) Protect remaining expanses of unfragmented habitats;

2) Minimize further loss of fragmented habitat; and

3) Enhance and restore habitat conditions to meet sage grouse life history needs.

These recommendations supplement the recommendations for sage grouse contained in the Chief's letter to Regional Foresters in Regions 1, 2, 4, 5 and 6 for sage grouse and sagebrush conservation (July 1, 2010)[13]. Another goal is to enhance consistency in management of activities on NFS land with the Bureau of Land Management (BLM) Instructional Memorandum (IM) No. 2012-043: Greater Sage-grouse Interim Management Policies and Procedures (December 22, 2011). Maintaining and restoring high quality habitat for sage grouse is consistent with the Multiple Use Sustained Yield Act of 1960 and the National Forest Management Act (1976). Development of these recommendations considered the BLM IM and use existing direction in Forest Service Manuals and Handbooks and laws and regulations applicable to the National Forest System.

These recommendations apply only to 20 Forest Service units involved in the LRMP amendment process (identified in appendix 1) and are applicable until interim directives are adopted or until the amendment for the LRMP unit is completed (77 FR 12792; March 2, 2012).

[13] USDA, Forest Service. 2010. Sage grouse and Sagebrush Conservation. Letter to Regional Foresters, (R-1, R-2, R-4, R-5, and R-6) from the Chief. File Code 2670. USDA, Forest Service, Wash. D.C. 2pp.

These recommendations apply to proposed Forest Service actions in sage grouse habitat. For the purposes of these recommendations, sage grouse habitat is defined as suitable and occupied sage grouse habitats, consisting of preliminary priority habitat (PPH) and preliminary general habitat (PGH). PPH is comprised of areas identified as having the highest conservation value for maintaining sustainable sage grouse populations. These areas include breeding, late brood-rearing and winter concentration areas. PGH is comprised of areas of occupied seasonal or year-round habitat outside of priority habitat. The Forest Service will work with the BLM and various states to review and validate PPH and PGH maps as they apply to NFS land, to ensure that all appropriate sage grouse habitats that are seasonally important to sage grouse on local NFS units are accurately identified.

Sage grouse PPH and PGH data and maps have been developed through a collaborative effort between the BLM and the respective state wildlife agencies. These maps were developed using the best available data, but may change as new information becomes available. Such changes will be coordinated with the state wildlife agencies and USFWS, so that the resulting delineation of PPH and PGH is as accurate as possible. In those instances where the BLM or Forest Service, USFWS, or state wildlife agencies have not completed this delineation, the 75% Breeding Bird Density maps (Doherty et al. 2010[14]) may be used to identify sage grouse habitat on NFS land. The Forest Service will work collaboratively with BLM, the states, and USFWS to establish the process for updating maps to include the latest PPH and PGH delineations for each state. Forest Service staff may access the PPH and PGH data from BLM, or through the respective state wildlife agencies. The identification of sage grouse habitat should be based upon current maps and inventories at the time decisions are made.

These recommendations do not apply to the Gunnison sage-grouse (*Centrocercus minimus*), Bi-state distinct population segment (DPS) of greater sage-grouse in California and Nevada, and the Washington State DPS of greater sage-grouse, or their habitat. The Bi-state (greater sage-grouse) population is subject to a separate listing decision under the Endangered Species Act (ESA) that includes lands within the Humboldt-Toiyabe and Inyo National Forests, and land under BLM administration, within the State of California and Nevada. A separate planning effort is underway to provide conservation guidance for the bi-state DPS. The Washington State DPS does not have sage grouse habitat on NFS lands.

All Proposed Actions

(FSM 2600 - Wildlife, Fish, and Sensitive Plant Habitat Management; 2610 - Cooperative Relations; 2620 - Habitat Planning and Evaluation)

- Greater sage-grouse is a Regional Forester's designated sensitive species for all Regions subject to these recommendations. All Forest Service units where these recommendations apply are required to evaluate the potential effects of proposed actions on sensitive species in biological evaluations (FSM 2672.4) for environmental analyses on all proposed Forest Service actions.

- When conducting environmental analyses on proposals affecting sage grouse habitat, document (1) short- and long-term objectives and (2) direct, indirect, and cumulative effects relative to sage grouse and its habitat. Evaluate proposed actions in sage grouse

[14] Doherty, K. E., J.D. Tack, J.S. Evans and D. E. Naugle. 2010. Mapping breeding densities of sage-grouse. Sage-grouse: A tool for range-wide conservation planning. BLM Completion Report: Interagency Agreement # L10PG00911.

habitat in a landscape-scale context to address habitat fragmentation, effective patch size, invasive species presence, and protection of intact sagebrush communities.

- Assure that sage grouse habitats on NFS lands are maintained or enhanced in accordance with goals and objectives and management guidance in relevant LRMPs and the principles established in these recommendations for so long as they remain in effect.
- Evaluate habitats when they are seasonally relevant for sage grouse. Unless there is contrary site specific information, in general, these dates are associated with major life history requisites:
    - Winter: 11/15 – 3/15
    - Breeding: 3/1 – 5/15
    - Nesting/Early Brood Rearing: 3/15 – 6/30
    - Late Brood Rearing: 7/1 – 9/30
- Incorporate measures to promote the maintenance of large intact sagebrush communities.
- Incorporate measures to limit the expansion or dominance of invasive species in sage grouse habitats.
- Include clear objectives to benefit sage grouse habitat and vegetation conditions in new activity plans and/or project plans. Base vegetation objectives on: (1) native shrub reference states as shown in the State and Transition Model outlined in the applicable Ecological Site Description (ESD) or similar information, where available; (2) published scientific habitat recommendations for specific areas; and (3) local sage grouse working group recommendations.
- Complete habitat inventories/assessments using the Sage Grouse Habitat Assessment Framework (Stiver et al. 2010) in a timely manner so that data are available for consideration in environmental analyses.
- Use integrated approaches to planning, funding, and implementing vegetation and habitat management projects to benefit sagebrush and sage grouse habitats.
- Maintain, enhance and restore sage grouse habitats, populations and connectivity. Give priority to areas determined to have important sage grouse populations, breeding sites or important seasonal habitats, such as areas identified in the Wyoming Core Area Strategy, state-led and local working group sage grouse plans, conservation agreements, and Forest Plans.
- Collaborate with the USFWS, States, BLM, NRCS and other agencies and landowners to promote consistent management of sagebrush and sage grouse habitats on adjoining lands
- Support and participate in state-wide and local sage grouse working groups for the conservation of sagebrush and sage grouse habitats.
- Work with authorized permittees and lessees to minimize habitat loss, fragmentation, and direct and indirect effects to sage grouse and sage grouse habitat, where adverse effects are occurring or expected to occur.

- NFS units retain the discretion to not move forward with an action, or to defer making a final decision, until the completion of the LRMP amendment process described in the National Sage-grouse Planning Strategy for the affected area.

- Determine, in coordination with the respective state wildlife agency, whether a proposal that may affect sage grouse or sage grouse habitats would likely have more than minor adverse effects to sage grouse or sage grouse habitat.

Additional Recommendations for Specific Resource Programs for Proposed Actions

Integrated Vegetation Management (FSM 2000-2900 - National Forest Resource Management)

Proposed Authorizations/Activities

- Coordinate, plan, design, and implement vegetation treatments (e.g., pinyon/juniper removal, fuels treatments, green stripping) and associated effectiveness monitoring using an interdisciplinary approach between wildlife, range, fuels management, emergency stabilization, and burned area rehabilitation programs.

- When designing vegetation treatments, consider FSM 2070, Vegetation Ecology, Ecological Site Descriptions (ESDs) assessment and monitoring protocols, and relevant literature (WAFWA 2009[15])

- Enhance the native sagebrush community, including the native shrub reference state in the State and Transition Model, with appropriate shrub, grass, and forb composition identified in the applicable ESD, where available.

- Pursue short-term objectives that include maintaining soil stability, hydrologic function of the disturbed site so resilient plant communities can be established.

- Pursue a long-term objective to maintain resilient native plant communities consistent with expected disturbance cycles. Choose native plant species in accordance with FSM 2070 Vegetation Ecology and relevant ESDs or similar information, where available, to revegetate sites. The Forest Service Native Plant Materials Policy (FSM 2070) provides guidance on the use of native plants in revegetation projects on NFS lands. If currently available supplies are limited, use the materials that provide the greatest benefit for sage grouse. When necessary, analyze the use of non-native species that do not impede long-term re-establishment goals of native plant communities and sage grouse habitat.

- Meet vegetation management objectives that have been set for seeding projects prior to returning the area to authorized uses as prescribed in current Forest or Grassland Plan direction. When treating invasive species, utilize an Integrated Pest Management approach. The Pesticide Use Management and Coordination Policy (FSM 2150) provides agency policy and guidance on the use of pesticides as part of an integrated pest management approach. Additional guidance is also provided in the Pesticide Use Management Handbook (FSH 2109).

[15] Western Assoc. of Fish and Wildlife Agencies (WAFWA). 2009. Prescribed Fire as a Management Tool in Xeric Sagebrush Ecosystems: Is it Worth the Risk to sage-grouse? Sage-and Columbian Sharp-tailed Grouse Tech. Comm. White Paper, WAFWA, 22 pp.

- Where pinyon and juniper are encroaching on sagebrush plant communities, design treatments to increase cover of sagebrush and/or understory to (1) improve habitat for sage grouse; and (2) minimize avian predator perches and predation opportunities on sage grouse.

- Improve degraded sage grouse habitats that have become encroached upon by shrubland or woodland species and seek opportunities to restore and expand habitat.

- Identify opportunities for prescribed fire or mechanical treatments only when these management actions are identified as the most appropriate tools to meet fuels/vegetation management objectives, short and long term sage grouse conservation objectives, and the potential for establishment, expansion or dominance of invasive species is minimal. Vegetation treatments should be part of a larger scale strategy to protect and restore sage grouse habitats.

- Before using prescribed fire, analyze the potential expansion or dominance of invasive species as a result of this treatment (See FSM 2900 p.22 #8).

Wildfire Suppression (5130 – Wildland Fire Suppression)

- Threatened, endangered, and sensitive species (including sage grouse) and associated habitats will continue to be a high natural resource priority for National and Geographic Multi-Agency Coordination Groups, whose purpose is to manage and prioritize wildland fire operations on a national and geographic area scope when fire management resource shortages are probable.

- Sage grouse protection and habitat enhancement is a high natural resource priority for the fire management program. A full range of fire management activities and options will be utilized to sustain healthy ecosystems (including sage grouse habitats) and minimize habitat loss within acceptable risk levels to firefighters and the public. Local agency administrators and resource advisors will convey protection priorities to incident commanders and identify areas appropriate for the use of fire retardant, bulldozers, and other suppression resources.

- So as to minimize resource damage, National Forests and Grasslands should identify local personnel qualified to serve as resource advisors, preferably fire-line qualified, capable of advising fire operations in sagebrush habitats.

- Appropriate local unit resource specialist(s) or designated resource advisor will coordinate with unit fire management personnel to identify important sage grouse areas (e.g. leks, winter concentration areas, or brood rearing areas) and develop options and strategies for their protection during wildfire incidents and management response.

Post Fire Restoration (FSM 2523 - Emergency Stabilization – Burned-Area Emergency Response [BAER])

- Conduct BAER consistent with WO Interim Directive 2523 to identify imminent post-wildfire threats to human life and safety, property and critical natural or cultural resources and take immediate action to manage unacceptable risks.

- Assess the need for implementation of burned area rehabilitation in sagebrush habitats relative to habitat value for sage grouse. For example, burns less than 500 acres may be appropriate for BAER if habitat impacted is near an active, well-populated lek.

- In BAER plans, prioritize re-vegetation projects to (1) maintain and enhance unburned intact sagebrush habitat when at risk from adjacent threats; (2) stabilize soils; (3) reestablish hydrologic function; (4) maintain and enhance biological integrity; (5) promote plant resiliency; (6) limit expansion or dominance or invasive species; and (7) reestablish native species.

- Increase post-fire activities through the use of integrated funding opportunities with other resource programs and partners.

- In areas burned within the past 3 years, ensure that effectiveness monitoring outlined in post-fire stabilization and rehabilitation plans continues and is reported. Post-fire stabilization and rehabilitation monitoring should continue until post-fire objectives are met.

Recreation and Non-Recreation (Roads, Powerlines, Pipelines, Non-mineral Energy Development) Special Use Authorizations (SUAs)

Recreation Special Use Authorizations (FSM 2700 - Special Uses Management)

Applications

- Work with applicants to minimize adverse impacts to sage grouse and sage grouse habitat.

- Where a Forest/Grassland line officer determines that it is appropriate to authorize a recreation use in sage grouse habitat, document the reasons for the determination and include measures to be implemented to minimize adverse impacts to sage grouse habitat.

Non-Recreation Special Uses (e.g., Roads, Power Lines, Pipelines, Non-mineral Energy Development) (Special Uses Handbook - FSH 2709.11)

Existing Uses

- Where sage grouse conservation opportunities exist, the authorized officer should work with the holders to include provisions in the operating plan to avoid or minimize impacts on sage grouse habitat from operation and maintenance of the authorized use.

- When amending an authorization or reauthorizing a use, assess the impacts of ongoing use on sage grouse habitat and avoid or minimize such impacts to the extent practicable.

Proposed Uses

- Within 3 kilometers of sage grouse habitat, avoid authorizing placement of overhead powerlines (e.g. by requiring that power lines be buried, where feasible) or other tall structures that provide perch sites for raptors.

- In consultation with the state wildlife agency, determine whether the proposed use likely would likely more than minor adverse effects to sage grouse and sage grouse habitat.

- If the proposed use likely would have more than minor adverse effects on sage grouse habitat:

    - Consider feasible alternatives for siting the use outside of sage grouse habitat.

- Identify technically feasible best management practices in terms of siting (e,g, burying power lines) that may be implemented, to avoid or minimize impacts on sage grouse or sage grouse habitats.

- In consultation with the state wildlife agency, develop mitigation measures for construction, maintenance, operation, and reclamation of the proposed use that minimize impacts to sage grouse habitat.

Minerals Management
Leasable Minerals (FSM 2820 - Mineral Leases, Permits, and Licenses)

Proposed Leasing (i.e., a lease has not been issued and, therefore; no valid existing rights)

- Required environmental analyses for leasing in areas affecting sage grouse habitat shall adhere to the applicable policies and procedures outlined in the "All Proposed Actions" section of this ID.

- In that BLM oftentimes utilizes Forest Service environmental analyses to support its independent leasing decisions, Forest Service analyses and associated decisions/recommendations should be consistent with the leasable mineral guidance contained in BLM Instructional Memorandum No. 2012-043.

- Exercise any authority which the Forest Service has with respect to the authorization of lease issuance for National Forest System lands to avoid or minimize adverse effects to sage grouse and sage grouse habitat.

Forest Service Authorizations Relating to Existing Leases (i.e., the lease has been issued and valid existing rights have been established)

- For existing Forest Service authorizations (i.e., a permit such as a special use permit, a road use permit or a surface use plan of operations which has been issued) in areas where sage grouse conservation opportunities exist, the Forest/Grassland should work in cooperation with the operator to avoid and minimize effects on sage grouse and sage grouse habitat.

- For proposed/pending Forest Service authorizations relating to an existing lease (i.e., a proposed permit such as a special use permit, a road use permit or a surface use plan of operations) in areas where sage grouse conservation opportunities exist, require measures to avoid or minimize adverse effects to sage grouse and sage grouse habitat.

- Exercise any authority which the Forest Service has with respect to the conduct of operations on an existing leasehold to avoid or minimize adverse effects to sage grouse and sage grouse habitat.

Locatable Minerals (FSM 2810 - Mining Claims)

Ongoing Authorizations/Activities (i.e., existing operations conducted under a Notice of Intent to Operate or a Plan of Operations)

- When ongoing operations are causing or will likely cause significant disturbance of surface resources not authorized by an approved plan of operations, units should utilize the authority provided by 36 CFR 228.4(a)(4) to require an operator to submit a plan of

operations for approval; or, if appropriate, the authority provided by 36 CFR 228.4(d) to require an operator to supplement an approved plan of operations.

- If ongoing operations authorized by a plan of operations are causing unforeseen significant disturbance of surface resources, units should exercise the authority provided in 36 C.F.R. 228.4(e) concerning modifying the plan of operations.

Proposed Authorizations/Activities (i.e., new Notices of Intent to Operate or Plans of Operation)

- Ensure that new notices of intent adequately describe proposed operations to assess whether or not significant disturbance of National Forest System surface resources, including sage grouse and sage grouse habitat, is likely. When the authorized officer determines that the operations described by a notice of intent to operate are likely to cause significant disturbance of National Forest System surface resources, require the submission of a proposed plan of operations and advise the operator that the operations cannot be conducted until the plan of operations is approved.

- Require that new plans of operation include measures to avoid or minimize adverse effects to sage grouse and sage grouse habitat.

Salable Minerals (FSM 2850 - Mineral Materials)

Existing Authorizations (i.e., a contract, prospecting permit or permit has been issued leading to the creation of valid existing rights)

- When operating plans have been approved, work with the holders of the authorization to develop reasonable conditions such as siting/design of infrastructure, timing of operations, or reclamation standards that will avoid or minimize effects to sage grouse and sage grouse habitat.

- When proposed operating plans are submitted, require reasonable conditions that will avoid or minimize effects to sage grouse and sage grouse habitat.

Proposed Authorizations

- Require that authorizations provide for the development of operating plans which include measures to avoid or minimize adverse effects to sage grouse and sage grouse habitat.

Grazing Administration and Rangeland Management (FSM 2200 – Rangeland Management)

Ongoing Allotment Administration

- When developing drought contingency plans, evaluate the season of use, stocking rate, and pasture rotation schedules and adjust in accordance with permit terms and applicable regulations to promote retention of herbaceous composition and structure to meet sage grouse habitat requisites.

- Continue to coordinate with other Federal agencies, state agencies, and non-Federal partners. Implement the 2010 Memorandum of Understanding between the BLM, NRCS, FWS, and Forest Service for enhancing sage grouse habitat through grazing practices.

- Conduct effectiveness monitoring of grazing activities to ensure that current management is meeting sage grouse habitat objectives as described in Allotment Management Plans.

Proposed Authorizations/Activities

- When several small or isolated allotments occur within a watershed or delineated geographic area, strive to evaluate all of the allotments together. Pursue opportunities to incorporate multiple allotments under a single management plan/strategy where incorporation would result in enhancing sage grouse or sage grouse habitat.

- Coordinate BMPs and vegetation objectives with BLM, NRCS and adjacent private land owners for consistent application across all jurisdictions as described in NRCS's National Sage Grouse Initiative.

- When revising allotment or grazing management through an environmental analysis, utilize an interdisciplinary team, as practicable, to identify reasonable sage grouse habitat objectives and evaluate a range of reasonable alternatives to accomplish those objectives.

- Incorporate management objectives that that promote the growth and persistence of native shrubs, grasses, and forbs beneficial to sage grouse. Utilize Ecological Site Descriptions or other State and Transition Models, where they are available, to develop realistic objectives.

Wild Horse and Burro Management (FSM 2260 - Wild Free-Roaming Horses and Burros)

- Manage wild horse and burro population levels within established appropriate management levels (AML).

- Wild Horse and Burro Territories within sage grouse habitat should receive priority for removal of excess Animals, as appropriate. This includes those territories where AML has been set at zero and animals are present.

Fences (FSM 2240 – Range Improvements)

- Evaluate the need for proposed fences, especially those within 1.25 miles[16] of leks that have been active within the past 5 years and in movement corridors between leks and roost locations. Apply mitigation (e.g., proper siting, marking, post and pole construction) to avoid or minimize potential impacts to sage grouse as determined in cooperation with the respective state wildlife agency.

- Identify and remove fences not needed for resource management, particularly those within 1.25 miles of leks.

- To improve visibility, mark existing fences within 1.25 miles3 of a lek that have been identified as a collision risk. Fences posing higher risks to sage grouse include fences:

    - On flat topography;

    - Where spans exceed 12 feet between T-posts;

[16] Stevens, B.S. 2011. Impacts of Fences on sage-grouse in Idaho: Collision, Mitigation, and Spatial Ecology (Master's Thesis). University of Idaho, Moscow, Idaho.

- Without wooden posts; or
- Where fence densities exceed 1.6 miles of fence per section (640 acres).

Water Developments (applicable to all programs) (FSM 2240 – Range Improvements)

Proposed Authorizations/Activities

- Include escape ramps and a mechanism, such as a float or shut-off valve, to control the flow of water in tanks and troughs.
- Carefully consider available design criteria or treatments (e.g., *Bacillus thuriengensis*) for water development structures in a manner that minimizes potential for production of mosquitoes that may carry West Nile virus, where the disease is a known mortality factor.

Travel Management (FSM 7700)

Ongoing Authorizations/Activities

- Follow existing guidance in Forest Service Travel Management Plans implemented through the Motor Vehicle Use Map (MVUM). In annual reviews and updates of MVUMs, consider effects to sage grouse and sage grouse habitat.
- Consider using emergency closures of designated routes if use disturbs important sage grouse habitats (i.e., breeding, brood-rearing, winter).

Realty Actions (e.g., Land Exchanges, Transfers, and Sales) (FSM 5400 - Landownership)

It is Forest Service policy that where a Forest or Grassland determines that it is appropriate to implement a public land disposal action, the following process must be followed:

- The Forest Service will document the reasons for its determination and implement measures to minimize impacts to sage grouse habitat.

Vegetation and Resource Monitoring

- Monitor activities and projects using the BLM core indicators and protocols (e.g., BLM Assessment, Inventory, and Monitoring Strategy) to ensure that the objectives are being met. Supplement data collection, as necessary, with other programmatic information for the site to demonstrate that objectives are being met.
- Until further direction is provided, and within the range of the sage grouse, collect and report the following for inclusion in the appropriate Forest Service database (e.g., WFRP, INFRA, etc.) which will be reported to the FWS as requested:
    - Miles, acres, and/or number of structures (e.g., fences, water developments, well pads, gravel pits, roads) removed, installed, relocated, decommissioned, modified, or mitigated to benefit sage grouse and sage grouse habitat;
    - Number of Forest Service use authorizations issued or deferred and the associated acres where changes in management were implemented to benefit sage grouse and sage grouse habitat;

- Acres where the Forest Service implemented changes in use in order to improve sage grouse habitat in cooperation with other Federal or state agencies;
- Acres of sage grouse habitat altered by wildland fire, acres treated after fire, and acres not treated after fire that were in need of treatment;
- Acres of sage grouse habitat altered by fuels treatment projects and how those treatments affected sage grouse habitat;
- Acres of vegetation treated to benefit sage grouse habitat; and number of allotments assessed for land health standards, with associated acres, according to table 7A of the Rangeland Inventory, Evaluation, and Monitoring Report.

Forest/Grassland Land and Resource Management Plans Proposed for Revision or Amendment

- Ashley (UT)
- Beaverhead-Deerlodge (MT)
- Boise (ID)
- Bridger-Teton (WY)
- Caribou (ID)
- Challis (ID)
- Curlew (ID)
- Dixie (UT)
- Fishlake (UT)
- Humboldt (NV)
- Manti-LaSal (UT)
- Medicine-Bow
- Routt
- Salmon (ID)
- Sawtooth (ID)
- Targhee (ID)
- Thunder Basin
- Toiyabe (NV)
- Uinta (UT)
- Wasatch-Cache (UT)

A2: BLM Bi-state Distinct Population Segment of Greater Sage-grouse Interim Management Policies and Procedures

Note: This document has been scanned in its original format and begins on the following page.

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Nevada State Office
1340 Financial Boulevard
Reno, Nevada 89502-7147
http://www.blm.gov/nv
December 3, 2012

In Reply Refer To:
1110 (170/200/300/400) P

EMS TRANSMISSION 12/05/12
Instruction Memorandum: No. NV-2012-061
Expires: 09/30/2013

To: Carson District and Tonopah Field Office

From: State Director

Subject: Bi-State Distinct Population Segment of Greater Sage-Grouse Interim Management Policies and Procedures

Program Areas: All Programs.

Purpose: This Instruction Memorandum (IM) provides interim conservation policies and procedures to Bureau of Land Management (BLM) field officials to be applied to ongoing and proposed authorizations and activities that affect the Bi-state Distinct Population Segment (DPS) of Greater Sage-Grouse *(Centrocercus urophasianus)* (hereafter referred to as the Bi-State DPS) and its habitat. This direction ensures that interim conservation policies and procedures are implemented when the Carson District or Tonopah Field Office authorizes or carries out activities on public land during the current revision of the Districts' Resource Management Plans (RMP). These revisions will develop and decide how to best incorporate long-term conservation measures for Bi-State DPS on lands within the Carson City District and Tonopah Field Office. This interim direction promotes sustainable Bi-State DPS populations and conservation of its habitat while not foreclosing any future options before the planning process can be completed. The goal of amending or revising BLM Land Use Plans with Bi-State DPS conservation direction is to ensure appropriate regulatory mechanisms are in place to ensure the conservation of this DPS.

This IM supplements the direction for Bi-State DPS contained in the BLM Washington Office (WO) IM 2010-071 (*Gunnison and Greater Sage-Grouse Management Considerations for Energy Development*) and is consistent with WO-IM-2011-138 (*Sage-Grouse Conservation Related to Wildland Fire and Fuels Management*). The Bi-state DPS habitat managed by the Carson City District and Tonopah Field Office in California and Nevada is specifically covered by this IM and shown on the attached Bi-State Sage-Grouse Preliminary Priority Habitat Map.

The 2010 U.S. Fish and Wildlife Service (FWS) findings on petitions to list the Bi-State DPS (petition decision) (75 FR 13910 – 14014; 03/23/2010) identified habitat conversion and fragmentation from wildfire, invasive plants, energy and infrastructure development, urbanization, and agricultural conversion as the primary threats to the species throughout its range. Through this IM, the BLM is providing interim conservation policies and procedures across multiple programs while the BLM conducts revisions to RMPs. Maintaining and restoring high quality habitat for the Bi-State DPS is consistent with the BLM multiple-use and sustained-yield management direction of the Federal Land Policy and Management Act (FLPMA).

Policy/Action: As summarized in the BLM's National Strategy, emphasis for protecting and managing habitats of this Greater Sage-Grouse Distinct Bi-State Population Segment incorporates the following principles:

1) Protection of intact habitats;
2) Minimization of habitat loss and fragmentation; and
3) Management of habitats to maintain, enhance, or restore conditions that meet Bi-State DPS life history needs.

To provide guidance to field offices to promote these principles, this IM transmits policies and procedures that apply to ongoing and proposed BLM actions, including use authorizations, within Preliminary Priority Habitat (PPH) for the Bi-State DPS. PPH comprises areas that have been identified as having the highest conservation value to maintaining a sustainable Bi-State DPS. These areas would include occupied seasonal or year-round habitat in addition to breeding, late brood-rearing, and winter concentration areas. These areas have been identified by the CA and NV BLM in coordination with respective state wildlife agencies as the habitat crosses the state line (see attached map).

No Preliminary General Habitat has been identified for the Bi-State DPS. This is due to the overall lack of high quality sage-grouse habitat and scarcity of telemetry information to distinguish between priority and general habitat.

The policies and procedures identified in this IM are designed to minimize habitat loss in and will advance the BLM's objectives to maintain or restore habitat to desired conditions by ensuring that field offices analyze and document impacts to PPH and coordinate with the State and the Fish and Wildlife Service when issuing the decisions described below. These policies and procedures are in addition to, and do not replace, more protective measures in existing LUPs. The direction in this IM is time-limited for the planning area where the Distinct Bi-State Population Segment of Greater Sage-Grouse occurs. The conservation policies and procedures described in this IM will be applied until the appropriate regulatory mechanisms are in place to ensure the conservation of this DPS.

Preliminary priority habitat (PPH) data and maps for the Bi-State Distinct Population Segment were developed through a collaborative effort by the Bi-State DPS Technical Advisory Committee (TAC) that consisted of representatives from CA and NV BLM, USFS, USGS, USFWS and the respective state wildlife agencies. Copies of the map will be stored at the BLM National Operations Center, USGS Western Ecological Research Center, California Department of Fish and Game (CDFG), and Nevada Department of Wildlife (NDOW). The PPH areas were derived from the combination of modeling resource selection functions and calculating utilization distributions from sage-grouse telemetry data collected over a 7-year period. The

methods to produce these maps are scientifically supported and used the best available information. The maps will be updated as new data becomes available. Such changes would be science-based and coordinated with the TAC for the Bi-State so that the resulting delineation of PPH provides for sustainable populations. The TAC will establish the process for updating files to include the latest PPH delineations for each state. This information will assist in applying the interim conservation policies and procedures identified below. As LUPs are amended or revised, the BLM District or Field Offices will be responsible for coordinating with NDOW and CDFG to use the newest delineation of habitat. BLM staff may access the data, using the following link: \\blm\dfs\loc\EGIS\NV\GIS_Work\Multi-District_Project\RMP\BiState_RMP_Amend. Non-BLM personnel may access these maps through NDOW. Habitat in California but managed by the Carson City District will be maintained at the Carson City Field Office.

The BLM will continue to work with its partners including the US Forest Service, Western Association of Fish and Wildlife Agencies (WAFWA), FWS, U.S. Geological Survey (USGS), Natural Resource Conservation Service (NRCS), and the Farm Services Agency (FSA) within the framework of the Sagebrush Memorandum of Understanding (2008) and the WAFWA *Greater Sage-Grouse Comprehensive Conservation Strategy* (2006).

Interim Conservation Policies and Procedures for "Preliminary Priority Habitat"
Through these policies and procedures, BLM seeks to maintain, enhance, or restore conditions for the Bi-State DPS and its habitat.

Integrated Vegetation Management
Proposed Authorizations/Activities

- Evaluate land treatments (including Bi-State population habitat treatments) in a landscape-scale context to address habitat fragmentation, effective patch size, invasive species presence, and protection of intact sagebrush communities. Coordinate land treatments with adjacent land owners to avoid any unintended negative landscape effects to Bi-State DPS.
- When designing vegetation treatments, reference Ecological Site Descriptions (ESD), where available; the BLM *Integrated Vegetation Management Handbook* (H-1740-2); and a white paper developed by the Western Association of Fish and Wildlife Agencies entitled, *Prescribed Fire as a Management Tool in Xeric Sagebrush Ecosystems: Is it Worth the Risk to Sage-Grouse?*
- Coordinate, plan, design, and implement vegetation treatments (e.g., pinyon/juniper removal, fuels treatments, green stripping) and associated effectiveness monitoring between Resources, Fuels Management, Emergency Stabilization, and Burned Area Rehabilitation programs to:
    - Promote the maintenance of large intact sagebrush communities;
    - Limit the expansion or dominance of invasive species, including cheatgrass;
    - Maintain or improve soil site stability, hydrologic function, and biological integrity; and
    - Enhance the native plant community, including the native shrub reference state in the *State and Transition Model*, with appropriate shrub, grass, and forb composition identified in the applicable ESD where available.
- When conducting National Environment Policy Act (NEPA) analysis for vegetation treatments, document your analysis of (1) short- and long-term objectives and (2) direct, indirect, and cumulative effects of treatment types on Bi-State DPS and its habitat.

- Pursue short-term objectives that include maintaining soil stability and hydrologic function of the disturbed site so a resilient plant community can be established.
- Pursue a long-term objective to maintain resilient native shrub-steppe communities. Choose native plant species outlined in ESDs, where available, to revegetate sites. If currently available supplies are limited, use the materials that provide the greatest benefit for Bi-State DPS. When necessary, analyze the use of non-native species that do not impede long-term reestablishment goals of native plant communities and Bi-State DPS habitat.
- Meet vegetation management objectives that have been set for seeding projects prior to returning the area to authorized uses, specifically livestock grazing. This generally takes a minimum of two growing seasons (see Handbook H-1742, *Emergency Fire Rehabilitation Handbook*). When treating invasive species, use the standard operating procedures and best management practices outlined in the *2007 Vegetation Treatments Using Herbicides on BLM Lands in 17 States Environmental Impact Statement* and applicable practices found in its accompanying *Biological Assessment*.
- Where pinyon and/or juniper trees are encroaching on sagebrush plant communities, design treatments to increase cover of sagebrush and/or understory to: (1) improve habitat for Bi-State DPS; and (2) minimize avian predator perches and predation opportunities on Bi-State DPS.
- Implement management actions, where appropriate, to improve degraded Bi-State DPS habitats that have become encroached upon by shrubland or woodland species.
- Identify opportunities for prescribed fire; including where prescribed fire has been identified as the most appropriate tool to meet fuels management objectives and Bi-State DPS conservation objectives, and the potential expansion or dominance of invasive species has been determined to be minimal through an invasive species risk determination for the treatment project (see BLM Manual Section 9015). Before using prescribed fire, field offices must analyze the potential expansion or dominance of invasive species as a result of this treatment. Refer to Western Association of Fish and Wildlife Agencies entitled, *Prescribed Fire as a Management Tool in Xeric Sagebrush Ecosystems: Is it Worth the Risk to Sage-Grouse?*

Wildfire Emergency Stabilization and Burned Area Rehabilitation

Both Existing and Proposed Authorizations/Activities

- In Emergency Stabilization and Burned Area Rehabilitation plans, prioritize re-vegetation projects to (1) maintain and enhance unburned intact sagebrush habitat when at risk from adjacent threats; (2) stabilize soils; (3) reestablish hydrologic function; (4) maintain and enhance biological integrity; (5) promote plant resiliency; (6) limit expansion or dominance of invasive species; and (7) reestablish native species.
- Increase post-fire activities through the use of integrated funding opportunities with other resource programs and partners.
- In areas burned within the past 5 years, ensure that effectiveness monitoring outlined in post-fire stabilization and rehabilitation plans continues and report the results as outlined in WO-IM-2010-195. Post-fire stabilization and rehabilitation monitoring should continue until post-fire objectives are met.

Wildfire Suppression and Fuels Management

Existing Authorizations/Activities

- Threatened, endangered, and sensitive species (including Bi-State DPS) and associated habitats will continue to be a high natural resource priority for National and Geographic

Multi-Agency Coordination Groups, whose purpose is to manage and prioritize wildland fire operations on a national and geographic area scope when fire management resource shortages are probable.

- Bi-State DPS protection and habitat enhancement is a high priority for the fire management program. A full range of fire management activities and options will be utilized to sustain healthy ecosystems (including Bi-State DPS habitats) within acceptable risk levels. Local agency administrators and resource advisors will convey protection priorities to incident commanders.
- Comply with the policies established in WO-IM-2011-138 (Sage-grouse Conservation Related to Wildland Fire and Fuels Management) or successor guidance, regarding suppression operations and fuels management activities.
- Where prescribed fire has been identified as the most appropriate tool to meet fuels management and Bi-State DPS conservation objectives, the potential expansion or dominance of invasive species must be evaluated and determined to be minimal through an invasive species risk determination for the treatment project (see BLM Manual Section 9015).

Rights-of-Way (ROW) (e.g., Renewable Energy Projects, Roads, Powerlines, Pipelines)
Existing Authorized ROW (i.e., permit has been issued and the project may have been constructed)

- Where Bi-State DPS conservation opportunities exist, BLM District and Field offices should work in cooperation with rights-of-way (ROW) holders to conduct maintenance and operation activities, authorized under an approved ROW grant, to avoid and minimize effects on Bi-State DPS and its habitat.
- When renewing or amending ROWs, assess the impacts of ongoing use of the ROW to Bi-State DPS habitat and minimize such impacts to the extent allowed by law.

Pending and Future ROW Applications (i.e., permit application has not been received or has been received and is being processed)

- Conduct pre-application meetings for all new ROW proposals consistent with the ROW regulations (43 CFR 2804.10) and consistent with current renewable energy ROW policy guidance (WO-IM-2011-061, issued February 7, 2011).
- For pending applications, assess the impact of the proposed ROW on Bi-State DPS and its habitat, and implement the following:
    - Ensure that reasonable alternatives for siting the ROW outside of the PPH or within a designated utility/transportation corridor are considered and analyzed in the NEPA document.
    - Identify technically feasible best management practices, conditions, etc. (e.g., siting, burying powerlines) that may be implemented in order to eliminate or minimize impacts.
- For ROWs where the total project disturbance from the ROW and any connected action is less than 1 linear mile, or 2 acres of disturbance, develop mitigation measures related to construction, maintenance, operation, and reclamation activities that, as determined in cooperation with the respective state wildlife agency, would cumulatively maintain or enhance Bi-State DPS habitat.
- For ROW applications where the total project disturbance from the ROW and any connected action is greater than 1 linear mile or 2 acres of disturbance, it is BLM policy

that where a field office determines that it is appropriate to authorize a ROW, the following process must be followed:

- The BLM will document the reasons for its determination and require the ROW holder to implement measures to minimize impacts to Bi-State DPS habitat.
- In addition to considering opportunities for onsite mitigation, the BLM will, to the extent possible, cooperate with project proponents to develop and consider implementing appropriate offsite mitigation that the BLM, coordinating with the respective state wildlife agency, determines would avoid or minimize habitat and population-level effects (Refer to WO-IM-2008-204, Off-Site Mitigation). When developing such mitigation, the BLM should consider compensating for the short-term and long-term direct and indirect loss of Bi-State DPS and its habitat.
- Unless the BLM determines, in coordination with the respective state wildlife agency, that the proposed ROW and mitigation measures would cumulatively maintain or enhance Bi-State DPS habitat, the proposed ROW decision must be forwarded to the Bi-State Technical Working Group. If this group is unable to make a recommendation, the proposed action is elevated to the Executive Oversight Committee. If this group is unable to agree on the appropriate mitigation for the proposed ROW, then the proposed decision must be forwarded to the BLM Nevada State Director for a final decision.

- Field offices retain the discretion to reject or deny a ROW application, where appropriate, or defer making a final decision on an application until the completion of the LUP process described in the *National Greater Sage-Grouse Planning Strategy* for the affected area.

Leasable Minerals (Energy and Non-energy)

Fluid Mineral Leasing (i.e., oil, gas, and geothermal)
It is BLM policy that where a field office determines that it is appropriate to authorize a proposed leasing decision, the following process must be followed:

- The BLM will document the reasons for its determination and require the lessee to implement measures to minimize impacts to Bi-State DPS habitat.
- In addition to considering opportunities for onsite mitigation, the BLM will consider whether it is appropriate to condition the lease with a requirement for offsite mitigation that the BLM, coordinating with the respective state wildlife agency, determines would avoid or minimize habitat and population-level effects (refer to WO-IM-2008-204, Off-Site Mitigation).
- Unless the BLM determines, in coordination with the respective state wildlife agency, that the proposed lease and mitigation measures would cumulatively maintain or enhance Bi-State DPS habitat, the proposed lease decision must be forwarded to the Bi-State DPS Technical Working Team for their review. If this group is unable to agree on the appropriate mitigation for the proposed lease, then the proposed decision must be forwarded to the EOC, when appropriate, for its review. If the EOC is unable to agree on the appropriate mitigation for the proposed lease, they will coordinate with and brief the BLM State Director for a final decision in absence of consensus.
- Exception: Where drainage is likely or the lands are designated as No Surface Occupancy (NSO) in the existing LUP, the BLM may issue new leases with an NSO stipulation. The NSO stipulation will also have appropriate exception, waiver, and modification criteria. **Note:** A Controlled Surface Use stipulation is not an appropriate substitution for an NSO stipulation.

- Field offices retain the discretion to not move forward with a nomination or defer making a final decision on a leasing decision until the completion of the appropriate LUP for the affected area.

- Authorizations on Existing Leases (i.e., the lease has been issued and valid existing rights have been established)
  - Where Bi-State DPS conservation opportunities exist, work in cooperation with operators to minimize habitat loss, fragmentation, and direct and indirect effects to Bi-State DPS and its habitat.
  - Issue Written Orders of the Authorized Officer (43 CFR 3161.2) requiring reasonable protective measures consistent with the lease terms where necessary to avoid or minimize effects to Bi-State DPS populations and its habitat.

- Proposed Pending Authorizations (i.e., permit application has not been received or has been received and is being processed)
  It is BLM policy that where a field office determines that it is appropriate to issue a proposed authorization, the following process must be followed:
  - Where the BLM has not issued a permit for development, design future conditions or restrictions to minimize adverse effects to Bi-State DPS and its habitat (e.g., Best Management Practices (BMP), noise limitations, seasonal restrictions, minimization of habitat fragmentation, improved reclamation standards, proper siting/designing infrastructure, restoring habitat) prior to permit approval. These measures may be in addition to and more protective or restrictive than the stipulations and restrictions identified in approved LUPs, when reasonable (43 CFR 3101.1-2), supported by science, and analyzed through the NEPA process.
  - Consider suspending non-producing leases in instances where mitigation would not adequately protect the integrity of Bi-State DPS habitat until the BLM amends or revises the LUPs. Consistently apply protective measures to split estate lands.
  - In areas where Bi-State DPS populations have been substantially diminished, and where few birds remain, include actions in the authorization (e.g., siting/designing infrastructure, hastened habitat restoration) that will minimize habitat loss and promote restoration of habitat when development activities cease.
  - In addition to considering opportunities for onsite mitigation, the BLM will, to the extent possible, cooperate with project proponents to develop and consider implementing appropriate offsite mitigation that the BLM, coordinating with the respective state wildlife agency, determines would avoid or minimize habitat and population-level effects (refer to WO-IM-2008-204, Off-Site Mitigation). When developing such mitigation, the BLM should consider compensating for the short-term and long-term direct and indirect loss of Bi-State DPS and its habitat.
  - For geophysical exploration activities, include seasonal timing limitations and BMPs as permit conditions of approval to eliminate or minimize surface-disturbing and disruptive activities within nesting and brood-rearing habitat and winter concentration areas.
  - Ensure authorizations under Onshore Oil and Gas Order No. 7 (Disposal of Produced Water) consider the potential impacts to Bi-State DPS from West Nile virus and develop appropriate mitigation measures.

Grazing Permit/Leases Issuance/Grazing Management
Grazing can have localized adverse effects on Bi-State DPS habitat depending on the condition of the habitat and the grazing practices used. Depending on design and application, grazing practices can also be used as a tool to protect intact sagebrush habitat and increase habitat extent and continuity which is beneficial to Bi-State DPS and its habitat. Given the potential financial constraints in addressing the primary threats identified by the FWS, enhanced management of livestock grazing may be the most cost-effective opportunity in many instances to improve Bi-State DPS habitat on public lands. Utilize the best available science in defining seasonal Bi-State DPS habitat requisites relative to potential impacts of livestock grazing on habitat features (e.g. Connelly et al. 2000, Hagen et al. (2007, Knick and Connelly (eds.) 2010.

To promote grazing practices that will protect PPH and minimize adverse effects on Bi-State DPS and its habitat, the BLM will implement the following:

Existing Authorizations and? Activities

- If periods of drought occur, evaluate the season of use and stocking rate and, adjust through coordination, annual operation plans and billings processes.
- Continue to coordinate with other Federal agencies, state agencies, and non-Federal partners. Leverage funding to implement habitat projects and implement the recent Memorandum of Understanding between the BLM, NRCS, FWS for enhancing PPH through grazing practices.
- Continue to prioritize use, supervision and effectiveness monitoring of grazing activities to ensure compliance with permit conditions and that progress is being made on achieving land health standards.
- Continue to evaluate existing range improvements (e.g., fences, watering facilities) associated with grazing management operations for impacts on Bi-State DPS and its habitat. Where appropriate, modify range structural improvements that are having adverse effects on Bi-State DPS (e.g. fence markers).

Proposed Authorizations/Activities – Permit/Lease Renewal/Issuance

- When several small or isolated allotments occur within a watershed or delineated geographic area, evaluate all of the allotments together. Prioritize this larger geographic area in the context of PPH areas for processing permits/leases for renewal.
- Coordinate BMPs and vegetative objectives with NRCS for consistent application across jurisdictions where the BLM and NRCS have the greatest opportunities to benefit Bi-State DPS, particularly as it applies to the NRCS's National Sage-Grouse Initiative (http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/programs/farmbill/initiatives/?&cid=steldevb1027671). See the 2010 Four-Agency MOU singed by the BLM, Forest Service, NRCS and FWS for further guidance in management collaboration.
- Pursue opportunities to incorporate multiple allotments under a single management plan/strategy where incorporation would result in enhancing Bi-State DPS populations or its habitat as determined in coordination with respective state wildlife agency.
- Use the process in WO-IM-2009-007, Process for Evaluating Status of Land Health and Making Determinations of Causal Factors When Land Health Standards Are Not Achieved, to identify appropriate actions where current livestock grazing management has been identified as a causal factor in not meeting Land Health Standards (43 CFR 4180).
- Evaluate progress towards meeting standards that may affect the Bi-State DPS or its habitat prior to authorizing grazing on an allotment that was not achieving land health

8

standards in the last renewal cycle, and livestock was a significant causal factor. Where available, use current monitoring data to identify any trends (e.g., progress) toward meeting the standards. Where monitoring data are not available or inadequate to determine whether progress is being made toward achieving Land Health Standards, an interdisciplinary team should be deployed as practicable to conduct a new land health assessment. The NEPA analysis for the permit/lease renewal must address a range of reasonable alternatives including alternatives that improve Bi-State DPS habitat.

- If livestock grazing was the cause of not achieving land health standards that have potential to impact Bi-State DPS or its habitat in the last permit renewal cycle, an interdisciplinary team should be deployed as practicable to conduct a new land health evaluation to determine if the allotment is making progress and if livestock grazing remains a casual factor.
- Plan and authorize livestock grazing and associated range improvement projects on BLM managed lands in a way that maintains and/or improves Bi-State DPS and its habitat. Analyze through a reasonable range of alternatives any direct, indirect, and cumulative effects of grazing on Bi-State DPS and its habitats through the NEPA process:
    - Incorporate available site information when evaluating existing resource condition and developing resource solutions,
    - Incorporate management practices that will provide for adequate residual plant cover (e.g., residual grass height) and diversity in the understories of sagebrush plant communities as part of viable alternatives. When addressing residual cover and species diversity, refer to the ESD and "*State and Transition Model*," where they are available, to guide the analysis.
    - Evaluate and implement grazing practices that promote the growth and persistence of native shrubs, grasses, and forbs. Grazing practices include kind and numbers of livestock, distribution, seasons of use, and livestock management practices needed to meet both livestock management and Bi-State DPS habitat objectives.
    - Evaluate the potential risk to Bi-State DPS and its habitats from existing structural range improvements. Address those structural range improvements identified as posing a risk during the renewal process.
    - Balance grazing between riparian habitats and upland habitats to promote the production and availability of beneficial forbs to the Bi-State DPS in meadows, mesic habitats, and riparian pastures for Bi-State DPS use during nesting and brood-rearing. Consider changing livestock use in riparian/wetland areas to before or after the summer growing season to ensure habitat availability for Bi-State DPS when these habitats are important to broods.
- To ensure that the NEPA analysis for permit/lease renewal has a range of reasonable alternatives:
    - Include at least one alternative that would implement a deferred or rest-rotation grazing system, if one is not already in place and the size of the allotment warrants.
    - Include a reasonable range of alternatives (e.g., no grazing or a significantly reduced grazing alternative, current grazing alternative, increased grazing alternative, etc.) to compare the impacts of livestock grazing on Bi-State DPS habitat and land health from the proposed action.
    - If land treatments and/or range improvements are the primary action for achieving land health standards for Bi-State DPS habitat maintenance or enhancement, clearly display the effects of such actions in the alternatives analyzed.

Fences (Applicable to all programs)

- Evaluate the need for proposed fences, especially those within PPH that have been active within the past 5 years and in movement corridors between leks and roost locations. Consider deferring fence construction unless the objective is to benefit Bi-State DPS habitat, improve land health, promote successful reclamation, protect human health and safety, or provide resource protection. If the BLM authorizes a new fence, then, where appropriate, apply mitigation (e.g., proper siting, marking, post and pole construction, let-down fences) to minimize or eliminate potential impacts to Bi-State DPS as determined in cooperation with the respective state wildlife agency.
- To improve visibility, mark existing fences that have been identified as a collision risk. Prioritizing fences within PPH, fences posing higher risks to Bi-State DPS include those:
    - On flat topography;
    - Where spans exceed 12 feet between T-posts;
    - Without wooden posts; or
    - Where fence densities exceed 1.6 miles of fence per section (640 acres).[3]

Water Developments (applicable to all programs)

Proposed Authorizations/Activities

- NEPA analysis for all new water developments must assess impacts to Bi-State DPS and its habitat.
- Install escape ramps and a mechanism such as a float or shut-off valve to control the flow of water in tanks and troughs.
- Design structures, or control water to developments, in a manner that minimizes potential for production of mosquitoes which may carry West Nile virus.

Special Recreation Permits

Existing Authorization/Activities

- Work with permittees to avoid or minimize effects to Bi-State DPS and its habitat.
- Evaluate existing Special Recreation Permits (SRP) for adverse effects to Bi-State DPS and modify or cancel the permit, as appropriate, to avoid or minimize effects of habitat alterations or other physical disturbances to Bi-State DPS (e.g., breeding, brood-rearing, migration patterns, or winter survival).
- Implement any necessary habitat restoration activities after SRP events. Restoration activities must be consistent with Bi-State DPS habitat objectives as determined by the BLM field office in collaboration with the respective state wildlife agency.

Proposed Authorizations/Activities

- Work with permit applicants to avoid impacts to Bi-State DPS and its habitat.
- It is BLM policy that where a field office determines that it is appropriate to authorize a proposed special recreation permit, the following process must be followed:
    - The BLM will document the reasons for its determination and require the permittee to implement measures to minimize impacts to Bi-State DPS habitat.
    - In addition to considering opportunities for onsite mitigation, the BLM will consider whether it is appropriate to condition the permit with a requirement for offsite mitigation that the BLM, coordinating with the respective state wildlife agency, determines would avoid or minimize habitat and population-level effects (refer to WO-IM-2008-204, Off-Site Mitigation).

    - Unless the BLM determines, in coordination with the respective state wildlife agency, that the proposed permit and mitigation measures would cumulatively maintain or enhance Bi-State DPS habitat, the proposed special recreation permit decision must be forwarded to the Bi-State DPS Technical Team for their review. If this group is unable to agree on the appropriate mitigation for the proposed special recreation permit, then the proposed decision must be forwarded to the EOC, for its review. If the EOC is unable to agree on the appropriate mitigation for the proposed special recreation permit, the EOC will coordinate with and brief either the BLM State Director or designee for a final decision in absence of consensus.
- Field offices retain the discretion to not move forward with a special recreation permit application or defer making a final decision on a special recreation permit decision until the completion of the appropriate LUP process for the affected area.

Recreation Sites

- Use conservation measures to avoid impacts to Bi-State DPS at existing recreation sites.
- Consider closing recreational sites either seasonally or permanently and restricting traffic to avoid or minimize effects of habitat alterations or other physical disturbances to Bi-State DPS (e.g., breeding, brood-rearing, migration patterns, or winter survival).

Travel Management

Existing Authorizations/Activities

- Evaluate authorizations and use to determine if continued use would result in habitat alterations or population disturbances that impair life history functions of the Bi-State DPS, such as breeding, brood-rearing, migration patterns, or winter survival, as appropriate.
- Place a high priority on closing and reclaiming unauthorized motor vehicle routes that cause habitat alterations or population disturbance.
- Limit and enforce motorized vehicle use to existing or designated roads, primitive roads, and trails and seasons of use to prevent habitat loss or population disturbance that impair life history functions of the Bi-State DPS, such as breeding, migration patterns, or winter survival.

Proposed Authorizations/Activities

- Route construction should be limited to realignments of existing or designated routes to enhance other resources only if that realignment conserves or enhances Bi-State DPS habitat. Use existing roads, or realignments as described above, to access valid existing rights that are not yet developed. If valid existing rights cannot be accessed via existing roads, then any new road constructed will be built to the absolute minimum standard necessary. No improvement to existing routes will occur that would change route category (i.e., road, primitive road, or trail) or enhance capacity.

Locatable Minerals

Existing Authorizations/Activities (i.e., existing operations conducted under a Notice or a Plan of Operations)

- Request that holders of Notices and Plans of Operation modify their operations to avoid or minimize adverse effects on Bi-State DPS and its habitat. Operators must be informed in the request that compliance is not mandatory.

Proposed Authorizations/Activities (i.e., new Notices or Plans of Operation)

- Require that new notices and plans of operation include measures to avoid or minimize adverse effects to Bi-State DPS populations and its habitat. Ensure that new notices and plans of operation comply with the requirements in 43 CFR 3809 to prevent unnecessary or undue degradation. Such compliance may assist in avoiding or minimizing adverse effects to Bi-State DPS populations and habitat.

Saleable Minerals

Ongoing Authorizations/Activities (i.e., an authorization has been issued)

- Where valid existing rights exist, work with the holders of authorizations to develop actions such as siting/design of infrastructure, timing of operations, or reclamation standards that will avoid or minimize effects to Bi-State DPS populations and its habitat.

Proposed Authorizations/Activities

- If the BLM has issued or, within 90 days of the issuance of this Instruction Memorandum, the BLM issues a DEIS or a FONSI:
  - Work with applicants to minimize habitat loss, fragmentation, and direct and indirect effects to Bi-State DPS and its habitat.
  - Determine, in coordination with the respective state wildlife agency, whether the proposed authorization would likely have more than minor adverse effects to Bi-State DPS and its habitat. If the proposed authorization would likely have more than minor adverse effects, then implement the policies and procedures set forth in the section immediately below ("All Other Proposed Authorizations/Activities").

- All Other Proposed Authorizations/Activities
  It is BLM policy that where a field office determines that it is appropriate to issue an authorization, the following process must be followed:
  - The BLM will document the reasons for its determination and implement measures to minimize impacts to Bi-State DPS habitat.
  - In addition to considering opportunities for onsite mitigation, the BLM will, to the extent possible, cooperate with project proponents to develop and consider implementing appropriate offsite mitigation that the BLM, coordinating with the respective state wildlife agency, determines would avoid or minimize habitat and population-level effects (refer to WO-IM-2008-204, Off-Site Mitigation). When developing such mitigation, the BLM should consider compensating for the short-term and long-term direct and indirect loss of Bi-State DPS and its habitat.
  - Unless the BLM determines, in coordination with the respective state wildlife agency, that the proposed pit and mitigation measures would cumulatively maintain or enhance Bi-State DPS habitat, the proposed pit authorization decision must be forwarded to the Bi-State DPS technical Working Team for their review. If this group is unable to agree on the appropriate mitigation for the proposed authorization, then the proposed decision must be forwarded to the EOC, when appropriate, for its review. If the EOC is unable to agree on the appropriate mitigation for the proposed authorization, the EOC will coordinate with and brief the BLM State Director for a final decision in absence of consensus.

- Exception- Pit Expansion Only: New permits may be issued for pit expansion, provided there are no adverse effects on Bi-State DPS and its habitat.
- Field offices retain the discretion to not move forward with an authorization, where appropriate, or defer making a final decision on regarding an authorization until the completion of the appropriate LUP process for the affected area.

Grasshopper and Mormon Cricket Control and Management

Proposed Authorizations/Activities

- If grasshopper control is proposed, the NEPA analysis must address impacts on Bi-State DPS and its habitat.
- Continue to implement WO-IM-2010-084, Grasshopper and Mormon Cricket Treatments within Bi-State DPS Habitat Coordinate with local Animal and Plant Health Inspection Service (APHIS) personnel and state wildlife agencies concerning treatments in Bi-State DPS habitat.
- Management actions and operating procedures may include, but are not limited, to the following:
  - Evaluate and restrict or modify treatment methods and timing of use or other mitigation.
  - Avoid spraying treatment areas in May and June (or as appropriate to local circumstances) to provide insect availability for early development of Bi-State DPS chicks.
  - Application timing should be implemented to reduce disturbance and impacts to Bi-State DPS.
  - Use approved chemicals with the lowest toxicity to Bi-State DPS that still provide effective control of grasshopper and Mormon cricket. Coordinate with APHIS to determine the approved chemical with the lowest toxicity.
  - Evaluate the appropriate percentages of Environmental Protection Agency (EPA) allowable chemical rates and the pros and cons of available chemical use, in coordination with state wildlife agencies, FWS, and APHIS.
  - Use *Carbaryl* only when necessary to treat large grasshopper and Mormon cricket populations late in the season. APHIS will coordinate the use with the respective BLM state office prior to any application.
  - Implement effectiveness monitoring, if warranted.

Wild Horse and Burro Management

Existing Authorizations/Activities

- Manage wild horse and burro population levels within established Appropriate Management Levels (AML).
- Wild Horse Herd Management Areas will receive priority for removal of excess horses within Bi-State DPS habitat.
- Wild horses and burros remaining in Herd Management Areas/Wild Horse Territories where the AML has been established as zero will receive priority for removal.
- When developing overall workload priorities for the upcoming year, prioritize horse gathers except where removals are necessary in non-PPH to prevent catastrophic herd health and ecological impacts.

Realty Actions (e.g., Land Exchanges, Transfers, and Sales)

It is BLM policy that where a field office determines that it is appropriate to implement a public land disposal action, the following process must be followed:

- The BLM will document the reasons for its determination and implement measures to minimize impacts to Bi-State DPS habitat. Unless the BLM determines, in coordination with the respective state wildlife agency, that the proposed land disposal action would cumulatively maintain or enhance Bi-State DPS habitat, the proposed land disposal action must be forwarded to the Bi-State Bi-State DPS Technical Team for their review. If this group is unable to agree on the appropriate mitigation for the proposed land disposal action, then the proposed decision must be forwarded to the EOC for its review. If the EOC is unable to agree on the appropriate mitigation for the proposed land disposal action, they will coordinate with and brief the BLM State Director for a final decision in absence of consensus.
- Exception: Those land disposal actions (e.g., the BLM's acceptance of an Application for Land for Recreation and Public Purposes, Publication of a Federal Register Notice of Realty Action, Execution of an Agreement to Initiate an Exchange, the BLM's acceptance of a State Application for Selection) initiated prior to or if the BLM is within 90 days of the issuance of a DEIS or FONSI for a land disposal action following the date of this IM.

Vegetation and Resource Monitoring

Existing Authorizations/Activities

- Continue to coordinate with NRCS and its contractors to implement the BLM *Landscape Monitoring Framework Project* developed under the *Assessment, Inventory and Monitoring Strategy* to assess the condition of public lands including PPH at a landscape level.
- Continue to work with livestock grazing permittees/lessees to collect specific kinds of monitoring information on their allotments to supplement monitoring information collected by the BLM (refer to WO-IB-2010-015, Grazing Permittee - Joint Cooperative Monitoring, for additional information) or Forest Service (cf. FSM or directive).
- Until further direction is provided, and within the range of the Bi-State DPS, the Wildlife Program for the BLM (1110) will collect, consolidate, and report the following annually to the Division of Fish and Wildlife Conservation (WO-230):
    - Miles, acres, and/or number of structures (e.g., fences, water developments, well pads, gravel pits, roads) removed, installed, relocated, decommissioned, modified, or mitigated to benefit Bi-State DPS and its habitat;
    - Number of BLM use authorizations issued or deferred and the associated acres where changes in management were implemented to benefit Bi-State DPS and its habitat;
    - Acres where the BLM implemented changes in use in order to improve habitat for the Bi-State DPS in cooperation with other Federal or state agencies;
    - Acres of habitat altered by wildland fire, acres treated after fire, and acres not treated after fire that were in need of treatment;
    - Acres of habitat altered by fuels treatment projects and how those treatments affected habitat;
    - Acres of vegetation treated to benefit Bi-State DPS habitat; and
    - Number of allotments assessed for land health standards and the associated acres, according to Table 7A of the *Rangeland Inventory, Evaluation and Monitoring Report*.

Proposed Authorizations/Activities

- New activity plans and/or project plans must include clear objectives to benefit Bi-State DPS habitat and vegetative resource conditions. Base these vegetative objectives on (1) the native shrub reference state as shown in the *State and Transition Model* outlined in the applicable ESD, where available; (2) published scientific habitat guidelines for specific areas and Bi-State DPS habitat requisites; and (3) local Bi-State DPS working group recommendations.
- Monitor activities and projects using the BLM core indicators and protocols (see the BLM *Assessment, Inventory and Monitoring Strategy*) to ensure that the objectives are being met. Supplement data collection, as necessary, with other programmatic information for the site to demonstrate that objectives are being met.
- Complete habitat inventories/assessments *in* a timely manner so that data are available for consideration in livestock grazing permit renewals and other management decisions.

Timeframe: This IM/ID is effective immediately and will remain in effect until the BLM completes the LUP process to amend the RMPs to provide protection for Bi-State DPS and its habitat.

Budget Impact: This IM/ID will result in additional costs for coordination, NEPA review, planning, implementation, and monitoring.

Background: In March 2010, the FWS published its petition decision for the Bi-State Distinct Population Segment of Bi-State DPS as "Warranted but Precluded." Inadequacy of regulatory mechanisms was identified as one of the major factors in the FWS's finding on Bi-State Distinct Population Segment of Bi-State DPS. The FWS has identified the principal regulatory mechanism for the BLM as protective measures embedded in LUPs. The goal is to conserve habitat necessary to sustain Greater Bi-State DPS populations and reduce the likelihood of listing under the Endangered Species Act.

Manual/Handbook Sections Affected: None.

Coordination: This IM/ID was coordinated with the Strategy Working Team for the Bi-State Sage-grouse Distinct Population Segment.

Contact: Direct any questions or concerns to application of this direction to Raul Morales, Deputy State Director for Resources, Lands, and Planning (NV930) at 775-861-6767 or rmorales@blm.gov, or to Joe Tague, Branch Chief Renewable Resources and Planning (NV934) at 775-861-6556 or jtague@blm.gov.

Signed by:	Authenticated by:
Amy Lueders	Edison Garcia
State Director	Staff Assistant

Attachment
1- Bi-State Sage-Grouse DPS Preliminary Priority Habitat Map (1 p)

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[1] Doherty, K. E., J.D. Tack, J.S. Evans and D. E. Naugle. 2010. Mapping breeding densities of Greater Sage-Grouse: A tool for range-wide conservation planning. BLM Completion Report: Interagency Agreement # L10PG00911.
[2]Stiver, S.J., E.T Rinkes, AND D.E. Naugle. 2010. Sage-grouse Habitat Assessment Framework. U.S. Bureau of Land Management. Unpublished Report. U.S. Bureau of Land Management, Idaho State Office, Boise, Idaho.
[3] Stevens, B.S. 2011. Impacts of Fences on Greater Sage-Grouse in Idaho: Collision, Mitigation, and Spatial Ecology (Master's Thesis). University of Idaho, Moscow, Idaho.

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A3: The Humboldt-Toiyabe National Forest Summary of Current Direction and Best Management Practices for the Protection of the Bi-state Sage Grouse

Note: This document has been scanned in its original format and begins on the following page.

Greater Sage-grouse

(*Centrocercus urophasianus*) updated: 9/19/11
ESA Candidate (Greater sage-grouse listing priority = 8, bi-state listing priority = 3), USFS R4 SS

- HTNF Management Plan Guidance: (Please note that while these guidelines are outdated, they are currently HTNF's official direction.)
  Humboldt National Forest Land and Resource Management Plan (1986):
  - Sage-grouse are designated as a Management Indicator Species (MIS) for sagebrush and riparian areas. Monitoring should detect a 20% change in 5 years (current: 36,300, min/max: 3,900/40,000)
  - Amendment #2: Key sage grouse habitat is defined as the portion of the habitat necessary to maintain and perpetuate the population. Included are winter ranges, breeding complexes, brood rearing areas, and water sources. Project proposals that will alter identified key sage grouse habitat will be analyzed, one the ground, with the appropriate NDOW personnel per the MOU between the FS R4 and NDOW The basis for project evaluation will be the current Forest Land Management Plan S&G, the Western States Sage Grouse Management practices as outlined in the technical bulletins and the Western States Sage Grouse Guidelines for Habitat Protection. Inventory of key sage grouse habitat and its various components will occur as part of the analysis of all proposed projects with the potential to adversely affect habitat capability.

  Toiyabe National Forest Land and Resource Management Plan (1986):
  - Sage-grouse are designated as an MIS.
  - The following standards are set for sage grouse habitats:
    - Use dropping counts, sage grouse sightings, and historical records to reveal location and importance of sage grouse habitat.
    - Maintain 20-55% canopy cover on sage grouse range.
    - Use irregularly designed patterns when manipulating brush in sage grouse habitat.
    - Maintain meadows in sage grouse range in high ecological status. Restore meadows.
    - Retain irregular leave strips of untreated sagebrush approximately 100 yards wide adjacent to stream bottoms and meadows.
    - Include use of a combination of forbs and grasses desirable to sage grouse when rehabilitating sage grouse habitat.
    - Maintain desirable sagebrush habitat on known sage grouse wintering areas.
    - As appropriate, National Forest personnel will arrange a joint on-the-ground review of proposed projects with the proper local or state wildlife biologist so details of wildlife coordination can be explained and discussed.
    - Protect critical areas for sage grouse brood rearing.
  - Monitoring is deferred to NDOW with the direction that monitoring should not show a decline (no % decline of time period are specified).
- Occurrence and Habitat Data Sources:
  NDOW Lek Layer Map
  NDOW Seasonal Habitat Map (winter, nesting, summer)
  NDOW Core Breeding Habitat Map (SW ReCap vegetation layer)
  NDOW Habitat Categorization Map (categories 0-5)
  BLM R-Value Map (Prioritization of Restoration Projects based on Habitat Condition and Importance)
- Mapping Parameters: Sagebrush-obligate found above 4,000 feet in elevation.
  Lek: Open sites within or adjacent to sagebrush dominated habitats: <10% slope, >25cm precipitation, <2km from water, low disturbance, low woodland encroachment (Nisbet et al. 1983)
  Nest: Can be >20km from a lek. They generally have larger bushes with greater obstructing cover.
  Brood-rearing: Early brood-rearing – sagebrush dominated areas near the nest. Late brood-rearing – area with perennial forbs at the edges of upland meadows. A mosaic of upland sagebrush vegetation intermixed with mountain meadows and spring systems.
  Winter: Broadly distributed, but largely dominated by mountain big sagebrush, Wyoming big sagebrush and low or black sagebrush.

- Survey Method: Assume that all suitable habitat, including that which is and is not mapped by NDOW (including a 3-mile buffer around all leks) is occupied unless surveys indicate otherwise. For walking transects, intensively search for birds or sign and record all observations with a GPS unit. Report data as the number of sign per kilometer of survey route walked. Here is a sample survey method:
  Mature sagebrush communities and meadow vegetation within the proposed area of disturbance and a 200-foot buffer outside of the disturbance footprint will be systematically surveyed with walking transects. Greater sage-grouse or their sign will be intensively surveyed for along each transect (50-100 feet apart). The UTM coordinates of each greater sage-grouse observation, nest, or fresh sign will be recorded with a GPS unit. A trained pointing dog will be used to assist in locating sage-grouse. Data will be reported as the number of sign per kilometer or survey route walked. Such data will be also provide a distribution map of where sage-grouse and/or sign were found.
- Monitoring: Sage-grouse demographics mirror those of other upland game birds with "boom and bust" natural cycles independent of anthropogenic activity; long-term data from NDOW indicate that a minimum of 10 years of monitoring is required to separate project effects (signal) from natural cycles (noise). NDOW oversees the state-wide sage-grouse monitoring effort in Nevada.
- Avoidance Measures/ Design Features (SO guidance is based on *Nevada Energy and Infrastructure Development Standards to Conserve Greater Sage-grouse Populations and their Habitats* (Nevada Governor's Sage-grouse Conservation Team 2010)):
  - Active leks (Category 1) and designated R0 habitat*:
    - No development (including transmission lines) within 3 miles of active leks. No roads within 0.6 miles.
    - No high-level disturbance within 3 miles of active leks during critical dates.
    - No low-level disturgance within 0.6 miles of active leks during critical dates.
    - Note: Migratory birds require expanded buffers to include the associated nesting habitat for that population.
      *R0 are described as, "habitat areas with desired species composition that has sufficient, but not excessive, sagebrush canopy and sufficient grasses and forbs in the undersotry to provide adequate cover and forage to meet the seasonal needs of sage-grouse (NV 2010).
  - Winter and high-quality brood-rearing habitat (Category 2):
    - No high-level disturbance in this habitat during critical dates (01 December – 01 March).
  - Springs, meadows, and riparian corridors:
    - No development within 0.6 miles of these features within identified brood-rearing habitats.
    - No high-level disturbance within 0.6 miles of these features within identified brood-rearing habitats during critical dates (01 June – 01 September).
  - Fire projects designed to enhance sage-grouse habitat must follow timing restrictions.
- Critical Dates (Dates are based on NDOW guidance. Guidance from USFS R4 is in parentheses):
  - Winter 12/1 – 3/1 (USFS R4 11/5-3/15)
  - Breeding (active lek) 3/1-5/15
  - Nesting/Early brood-rearing 3/15-6/30
  - Late Brood-rearing 6/1 – 9/1 (USFS R4 7/1 – 9/30)

  *The best times to allow for noise/activity are July 15 – November 30 (USFS R4 October 1 – November 30)
- Disturbance Examples:
  - High-level: ongoing noise (driling, continual traffic, generators). Noise above 55 decibels (dBa) should be muffled.
  - Low-level: concentrating livestock activities (salting, handling areas, water sources), light traffic (<12 vehicles per day from 10am-5pm).
- Conservation Measures/Mitigation/Restoration:
  - Consult local PMU and implement restoration strategies.
  - Coordinate large-scale restoration projects with NDOW and BLM.
  - Actively and aggressively suppress all wildland fires that occur in or near sage-grouse habitat.
  - Currently, there is no science to indicate that leks that are destroyed can be successfully created offsite and used by sage-grouse.
- Solar/Wind/Utility Developments:

- Contact NDOW and FWS for guidance.

- Key References:
  - Knick, S. T., and J. W. Connelly (editors). 2011. Greater sage-grouse: ecology and conservation of a landscape species and its habitats. Studies in Avian Biology Series (vol. 38), University of California Press, Berkeley, CA.
  - Nevada Sage-grouse Conservation Plan: http://www.ndow.org/wild/conservation/sg/plan/ (NDOW)
  - Nevada Governor's Sage-grouse Conservation Team. 2010. Nevada Energy and Infrastructure Development Standards to Conserve Greater Sage-grouse Populations and Their Habitats.
- Working Groups and Experts:
  - NV Governor's Sage Grouse Conservation Team (Sean Espinosa, lead)
  - NDOW: Sean Espinosa, sespinosa@ndow.org, 775-688-1523
  - FWS (NV): Steve Abele, steve_abele@fws.gov, 775-861-6300
  - HTNF Contact: Rachel Mazur, rmazur@fs.fed.us
- Humboldt National Forest LRMP (1986): Designates sage-grouse as an MIS for sagebrush grass and riparian areas. Monitoring should be designed to detect a 20% change in five years. The 1986 populations was 36,300. The min/max was designated as 3,900/40,000.
  - Amendment #2 (1990): Key sage grouse habitat is defined as the portion of the habitat necessary to maintain and perpetuate the population. Included are winter ranges, breeding complexes, brood rearing areas, and water sources. Project proposals that will alter identified key sage grouse habitat will be analyzed, one the ground, with the appropriate NDOW personnel per the MOU between the FS R4 and NDOW The basis for project evaluation will be the current Forest Land Management Plan S&G, the Western States Sage Grouse Management practices as outlined in the technical bulletins and the Western States Sage Grouse Guidelines for Habitat Protection. Inventory of key sage grouse habitat and its various components will occur as part of the analysis of all proposed projects with the potential to adversely affect habitat capability.
- Toiyabe National Forest LRMP (1986):
  - Standards for sage-grouse habitats:
    - Use dropping counts, sage grouse sightings, and historical records to reveal location and importance of sage grouse habitat.
    - Maintain 20-55% canopy cover on sage grouse range.
    - Use irregularly designed patterns when manipulating brush in sage grouse habitat.
    - Maintain meadows in sage grouse range in high ecological status. Restore meadows.
    - Retain irregular leave strips of untreated sagebrush approximately 100 yards wide adjacent to stream bottoms and meadows.
    - Include use of a combination of forbs and grasses desirable to sage grouse when rehabilitating sage grouse habitat.
    - Maintain desirable sagebrush habitat on known sage grouse wintering areas.
    - As appropriate, National Forest personnel will arrange a joint on-the-ground review of proposed projects with the proper local or state wildlife biologist so details of wildlife coordination can be explained and discussed.
    - Protect critical areas for sage grouse brood rearing.
  - Monitoring Plan: Be sure NDOW data don't show a decline.
- Northern Sierra Amendment (1999): Designates the sage-grouse as a species-at-risk.